

POPULAR Computing

WEEKLY

Atari plans research facility in Europe

Details on page 6

Superbase for
the Atari ST

Communicating
on your PCW

The rise and rise
of computer fraud

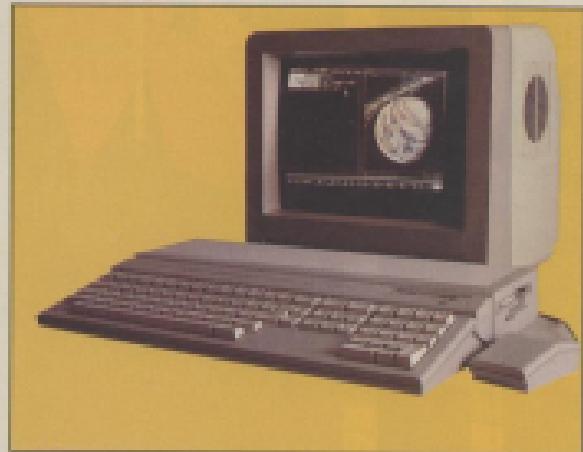


Illustration: Peter Gammie



THE QL

Desktop publishing
Graphics



REVIEWING THE 8000+
MACHINES IN OUR
CATALOGUE, WE FOUND
THESE TO BE THE
TOP 10 SELLERS.



WE ARE PLEASED TO
ANNOUNCE THAT THESE
MACHINES ARE NOW
AVAILABLE IN A
COMBINED CATALOGUE.

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\$17,95 ROLLER
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FIREBIRD



G
GOLD

May 8-14

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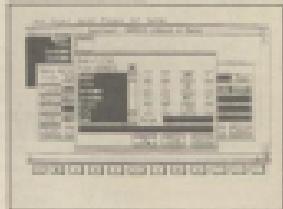
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For further information contact the
Digital Precision chairman, Robert
Penk, 1000 London Road, London SW19 8PR.
Telephone 0181 876 0000.

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ABC

Note to submit articles Articles which are submitted for publication should not be more than 2000 words long. The author, and any accompanying programs, should be original. If it is found that the use of copyright in any program or in other magazines has been made, the author will be compelled to assign his rights to return your program. In addition, we do not accept any copy rights. **Important** **Popular Computing Weekly** cannot accept any responsibility for any errors in programs not published, although we will always try our best to make sure programs work.

Popular Computing Weekly. Tel: 01-437 4343.

In defence of the small dealer

I reply to your correspondent D W Gration in the April 10 issue. I would like to offer a contrasting set of experiences. First of all I will admit to being a very basic user of the Commodore 64 and a regular reader of your magazine. This, perhaps, is what saved him from making the same mistakes he did.

Like Mr Gration I started the year with a desire to upgrade to a 16bit machine, and as there seemed to be only one at an affordable, publishable price, I also decided on the Amstrad 4600T.

I spoke to Mike Sharp, asking what I thought were simple questions about such matters as the voltage of the power supply. He already had to repeat the C64 PSU shot, and it's on the way but again, the trans and scan rates of the monochrome monitor, and whether the RGB output was TTL or linear. The person I spoke to didn't know. I spoke to no Atari Heptatec. Nobody there knew either.

In desperation I spoke to a South West London dealer. He, however, informed me a service manual was required and all my questions were unanswered. I was also told the answer to all his questions, such as just what was bundled with the machine and the prices of all the third party disc drives, etc. I was given such a good picture that I decided not to buy yet - still waiting for the Amiga/ST market to sort itself out a bit more. If I do buy an Atari I know where from.

I suppose the moral is the old one of let the buyer beware, and let him choose a good dealer.

Fido Computer
London SE10

No printer problems here

I refer to Kevin Garrick's reply to W L Pashow in April 10 issue of *Popcorn*.

I have had experience with a number of QL and printer set-ups and can report that with Epson and compatible printers (eg. Sinewave CP80 and clones) there is generally no problem in running at 9600 baud if using the serial port. The most printed problems I find arise whilst attempting to configure QL

and the other PMS programs to run with a specific printer.

The Amstrad MS 100 would try to print correctly, but it was a different kettle of fish, one of my friends recently purchased one and could not get it to work at all. This problem was resolved by making up a special cable which, believe, had pins 4, 5, 6 and 8 linked together. This information should be checked with Brother which my friend found most helpful. It could be Mr Frischard has a handshaking problem if one of these lines is not connected.

The printer I have dealt with have never required these connections to make them work and I suspect a large number of printer cables sold do not incorporate them.

Nicky Cox
Dorking

Escaping from the Organiser

With reference to the Palm Organiser program, Exchange, which you published in *Popcorn*, April 3:

The program as listed will itemise an address book which, which could be rather frustrating for a beginner, who may not know how to manage.

The solution is to add a *Quit* option to the menu on line two and tag the following line in to the end of the program, just before the ENDIF statement:

Line 3- STOP

Mike O'Leary
FPO price

Long live the Stone Age

I would like to present my response to "Farewell to the cassette tape" (Popcorn, April 11-12).

I have owned a 48k Spectrum and cassette recorder for four years, and during that time, I have only lost two cassettes - not bad for a "postmodern system".

In October last year, I decided to upgrade to a disc system, after being "enlightened" speed, reliability, convenience, etc.

During the six weeks that followed, I had two drives, both of which were sent back twice for a total of three weeks, programs mysteriously wiped out, valid disk commands rejected, disk formats when I tried to

save a program, and only two programs which saved properly.

Not surprisingly, I decided to get a second 3.5"abyte and convenience being replaced with compatibility and convenience!

One drive and discs may not be that expensive, but, for the Spectrum at least, they're about five times more expensive than cassette recorders and cassettes.

The ST and Amiga are in the business/upper home sector of the market, so who would expect them to have a cassette interface?

Last week I bought a Spectrum 128, and unless Amstrad produces a very similar, cheap disk upgrade for compatibility with the Plus 2, I would rather wait 12 months for a program to load than face a persistent claymore-style rescue.

Finally, Mr Sharp, I am not, as your article would suggest, a crusty person using a prehistoric blunder manufactured by a master, but somebody who has had experience of both cassettes and discs and trusts cassettes more.

David Banks
Preston

Forum for discussion

I would be grateful if you could mention a magazine on cartridge for the QL.

It is called Forum, and issue three available by sending 50p, a stamped addressed envelope and a blank formatted cartridge to Ian R Beattie at 25 The Broadway, High Laines, Canterbury CT4 8LP.

Ian R Beattie
Sunderland

The vanishing disc drive

The special feature on consumer rights (April 17) will have been of interest to many readers, although I give the impression that most problems are encountered with small computer shops and mail order outlets.

My major headache concerns high street shops better known for selling a certain range of computers.

Last summer I bought a Micro Peripherals disc drive and interface for my QL. After three months of moderate use the

interface developed a fault, so I returned it to a branch of the supplier.

Over three and a half months later the unit was returned (by the supplier, then the disc drive a month later) in a worse condition than when it was taken in for repair. The disc drive failed, and would no longer read my double-sided discs.

The drive is now with the chain of head office. I have been without the use of it for four and a half months out of the last eight, and can still see no prospect of a refund or replacement. Surely this is totally unacceptable behaviour on the part of a national chain store?

Michael J Jackson
Buxton on Teme

The Amiga vs Atari ST debate continues

I would be grateful if you could give me some advice on the Amiga 500 vs Atari ST debate. I have £800 to spend on one of them, and require stunning graphics, good sound, and a huge amount of software to choose from.

Do the ST and Amiga 500 both have these attributes? Are they both good for playing games off? Will more software be written for them in the QL (I'd because of little interest from software houses)?

George McCracken
Glasgow

Both the Amiga 500 and ST have graphic capabilities far superior to those on 8-bit machines. The sound chip in the Atari ST is the AT32810, while this is the same chip as in the Amstrad 484; for example, the sound potential on the ST is greater, thanks to its MIDI connections. The Amiga contains a custom sound chip and also has the option of stereo output.

Neither machine has a huge software base as yet. While the list of software available is growing for both machines, in the UK at least, the ST is ahead in this respect at the moment.

The machines are both "good" for playing games off, though you should bear in mind that games playing is not entirely what Commodore and Atari had in mind when designing them. Should you wish to turn to more business-oriented applications

letter, both will be suitable.

We believe that software companies will continue to write in ever increasing numbers for the Amiga and ST. Most major houses already include at least the ST in their plans for future releases, and when the Amiga will become available in the shops later this year, it should be gradually included as well in companies' plans.

Repairing points

Having read your April 10 issue, I feel prompted to write regarding a couple of points.

Firstly, the item in News Desk regarding Amstrad, the BBC and the PC1000.

I run the computer department of a large high street store. We have a PC1000 with double drive and colour monitor on display.

This machine is on from 9.00am in the morning until 5.30pm (6.00pm on Thursdays) six days a week. It has never shown any sign of overheating and we have never had any problems with it apart from when the clock batteries were flat.

All our customers who have purchased one from us have been satisfied and we have had no bad feedback from any of them.

Secondly, I would like to congratulate John Anderson (Letters, March 20) on his test of Mr. Watt's claim that the Amstrad PC showed incredible strength for drawing and calculating on the screen. Well, I am doing the same test with my Atari ST and GFA Basic and frankly I think the PC1000 is far from "incredible" as Mr. Watt would have you believe.

The time on my ST was 14.1 seconds. Testing for the Spectrum showed 41.6 seconds and the so-called famous Amstrad PC 90 seconds. In other words the ST was 28 times faster than the Spectrum and four times quicker than the PC. If you

consider the fact that Basic is perhaps the worst language to use on a 16-bit micro in terms of speed (that is, the reaction of Traumax in saying that PCs are more than clever is logical).

The support Amstrad has had from the British press is unequalled in any other country. And so it is not difficult to maintain a so-called majority in the British computer world.

But look, dear readers, at what kind of machines you have bought. Spectrum - which are completely out of the top 10 in Europe (even MSX is outselling them many times), CPC models which use weak 3.5 inch discs and with very expensive upgrades to change monitors, not to mention all those users who had to upgrade from 640 to 1024 in the CPC 128 version to the CPC 64 "Joyce".

I think it is true that British users come out of their "hollow" set of the computer industry and pay what the rest of the world has by offer. MSX 2 is good and so are the Amiga and the ST. On the ST I have now two operating systems, QEMM 1.05, CP/M, MS-DOS in serial, the Macintosh (in serial - from Germany) and far more compatible than the famous "whatever", 1, and CG-64.

I agree that you could save with your old Speccy, but upgrading it for a PC is like getting a bike to use the local bus.

Now, why are there so many business points out there who stuck with old MSX/C64? Well, it means they are customers with no knowledge on the subject. So, they just buying local tokens for the price of a Jaguar. It's not their money of course. No, it's yours.

Benny Scorsaro
Belgium

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Benny Scorsaro
Belgium

Forcing black's queen

The readers' latest move in

Game Two of the Colossus chess tournament is to attack black's queen with their bishop, forcing Colossus to move its Queen to e1.

Casting your vote

How would you continue the reader's attack? Send your suggestions to either letter columns (*Popular Chess*, *Freestyle*, *Backgammon*, *Hints* (CGM1 BYA, the name mentioned), or *Poplite Chess*, Unit 2, The Mallings, Sawbridgeworth, Herts CM21 0HQ) with a stamp.

All entries must reach either address by Wednesday, May 13.

The move which gets the most votes will be entered into the game. Results and Colossus's response will be published in two weeks time.

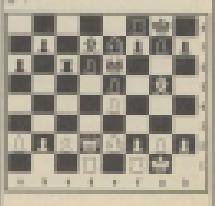
Prizes

A British Museum reproduction Aran chess set will go to the person suggesting the most accepted moves at the end of the game. Two copies of *Colossus Chess* will go to the most consistent entrants.

Next week: we return to Game Two, where the Pioneers are playing back.

Game Two

1. Fd5+ Kd7	Pd5+ Kd7
2. Fd7+ Kd8	Pa5+ Kd8
3. Fd8+ Kd9	Pd8+ Kd9
4. Fd9+ Kd10	Pd9+ Kd10
5. Fd10+ Kd11	Pd10+ Kd11
6. Fd11+ Kd12	Pd11+ Kd12
7. Fd12+ Kd13	Pd12+ Kd13
8. Fd13+ Kd14	Pd13+ Kd14
9. Fd14+ Kd15	Pd14+ Kd15
10. Fd15+ Kd16	Pd15+ Kd16
11. Fd16+ Kd17	Pd16+ Kd17
12. Fd17+ Kd18	Pd17+ Kd18
13. Fd18+ Kd19	Pd18+ Kd19
14. Fd19+ Kd20	Pd19+ Kd20
15. Fd20+ Kd21	Pd20+ Kd21



Popular/Simmons

Micro Source special offer

Taker No. 2

Last week, we printed the first token and order form for the Popular/Simmons Micro Source offer. Here is the second and last token you need to send for yours.

We're sorry but *Popular Computing Weekly* cannot guarantee to reply to all letters requesting a personal answer; if help is needed, it is suggested that readers are prepared to have general questions answered on these pages so, if possible, please do not send SAEs.

Atari plans research facility in Europe



The Mega ST - part of Transet's push into specialist technology

ATARI chairman Jack Tramiel has plans to set up a 'hardware centre' in the UK later this year.

This is expected to be an advanced software development unit, along the lines of Sinclair Research's Microlab, set up in 1984 to research into hardware technology.

Transet is believed to be in negotiation with programming

teams to staff the unit, apparently the decision has been taken to place the software centre in the UK due to the programming expertise in that country, while in the US for the recent Atari show, he is reported to have said, 'Team went to the bushes here'.

While it is thought that the research centre will be looking

at PICC (Programmed Instruction Set Chip) technology, no details have been released yet.

Atari is also considering setting up a research and development centre in West Germany, which will concentrate more on hardware innovations, and a computer manufacturing plant in North America. The Atari range of micros is currently manufactured in Taiwan.

Jack Tramiel: "I can smell the success!"



Digital Research moves away from mass market

DIGITAL RESEARCH is to move away from the mainstream operating systems market, and will be concentrating on vertical markets and multi-user applications, particularly with the current DOS 2000 system.

However, DR's UK vice president Paul Bailey said this move would make no difference to work on DOS, the DR operating system packaged with the Atari ST and Amstrad PCW412 machines, among others.

"We have three main markets," he said. "Multi-user micros, specialised industrial auto-

mation and graphics systems on DOS. We are totally committed to all three, although the main focus is on the multi-user markets."

"GEM is absolutely strategic to us; for example, when Atari brings out its new PC in August (see Popular Computing Monthly, May 1), there will be GEM, DesqView, Xerox Resco, and GEM-Works on it."

Bailey also affirmed his support for Amstrad, should Amstrad bring out further versions of its PC, incompatible later this year as expected.

Amiga 500 on show to over 18s only

COMMODORE has confirmed that it will launch the Amiga 500 to the public at the Commodore Show, starting on June 12.

However, the machine will be displayed in the Commodore Museum and Amiga Expo area, which is only open to those over 18 years old.

The Amiga is an area which will specialize in new Amiga products for serious hobbyists and business users.

Camel Epron blower now from Alphacam

CAMEL, Product Epron (now Epron-RS) is now available from Alphacam.

Epron-RS connects to any monitor with an RS232C with MTS/DRI and CDS handshake lines.



(Epron-RS costs £19.95 from Alphacam, and is available for the IBM PC, BBC, QL and Spectrum models. The price includes a cable and disc (microdrive for QLs).

Details from Alphacam at The Old Millings, 1209 Green Walk, Cambridge CB6 3QD, 0223 214214.

New micros for Flash Gordon

MASTERTRONIC is converting its Commodore 64 to Flash Gordon to the Spectrum, Amstrad CPC, MSX and Amiga first machines. The program will be available in June at Mastertronic's MAD range price of £19.95.



Activision and Codemasters in Grand Prix row

A ROW is brewing between budget newcomers Codemasters and American owned Activision over a recent Codemasters release, *Grand Prix Simulator*.

It is alleged similarities between that and the existing Super Sprint, licensed by Activision, which is causing the argument.

Fights started with Activision contacting Codemasters, alleging that *Grand Prix Simulator* – already a best selling title on the CPC – infringes its copyright and stating that unless the game was withdrawn from the market, a high Court injunction would be sought and damages claimed against projected loss of revenue.

Codemasters strongly denies the allegation and so far has refused to comply with Activision's demands.

Said Codemasters' David Dening, "They're both side-head racing games. But within that restriction, no specific point can be the same. I'm confident that it'll get to court, and we'll win."

To date, both companies have put the matter into the hands of their respective lawyers, and the dispute remains unresolved.

The battle could prove something of a test case. Previous disputes over licensing copyright have usually concentrated on specific sprite design and screen-layout – certainly not the case between GP2 and Super Sprint. If Activision wins on the premise that the general game concept is part of the license, the implications are enormous.

At the time of going to press, representatives from Activision were unavailable for comment.

SOFTWARE HOTLINES



Disturbance – quite a sensible name for a new game compilation for the PCW, from veteran *Design Design* which, believe it or not, has been around since early 1982.

The compilation contains conversions of three of its own releases, *MESPA*, *On The Run* and *2112AD*, whilst *Design Design* say, come at the ground between shoot-em-ups and problem solvers that should "satisfy even the Monza needs". Err, facts, if you had a Monza mind, would you buy a photocell?

Another sensible name, **Scrabble Software**, whose previous efforts include *Genetics* and *Peculiar*.

Scrabble is an Essex based programme that consists of Les Hare and Chris Yates who have just written a great little game for C64s, called *Virtual Cross Quod* (that's right), in which you play the part of a scrabbler and he said, "What has happened is that an evil master has stolen all the letters out of the eight levels of the game, a reduction you must really."

As you might guess from the title of the game, there's quite a lot of bounces/bounces involved, so your word is in realistic form (most of the time, but there's one half of a lot of shooting as well, with an extra powers thing randomly inspired by *Manic Panic*).

The vital extra power to get is the cat, which appears as a shield ball, following you around – well until independent control allows the fire button to depress. It's with the cat that you have to collect the pieces of paint that fall to the ground when you do certain things.

Out at the end of May on Commodore, Spectrum and probably Amstrad, too, it's well worth a look.

But, let's face it, there are times when nothing but a bit of grammatical essence will do, so why not load up *Protagonist*, from *Infringement*.

On ST, too, with other versions following, you are faced with the task of building, around which you smoothly scroll, collecting various gangplanks that appear at random, under drain covers, etc. Failure to do this within a strict time limit will result in your dismemberment. Good stuff!

Holy Licensing deal of the year, the kids will love it, but sales will not hold a candle to the sales and it could be the saving of the whole of *Argus Protagonist* – from *Quick-Off*, the Tots.

But wait, no Paul, no John, it's a shooter ST, if only they can get Tyke Tots to ban it, who knows...?

John Cook

New report cites harm from VDU exposure

THE most detailed report so far into the effects of VDUs on users was issued last week, and concludes that VDUs are harmful.

The report was commissioned by the council workers' union, NALGO, and published by the VDU Workers' Rights Campaign. It examined the effects of VDU use on 3,000 employees of the London Borough of Islington, and found some startling conclusions.

Most reports of this nature have proved inconclusive. However, in the NALGO report more than three-quarters of those users who were interviewed complained of blurred vision and painful eyes. Psychological and social effects such as depression were common, particularly among women.

Further problems, such as stress, are caused by computer breakdowns and printer noise.

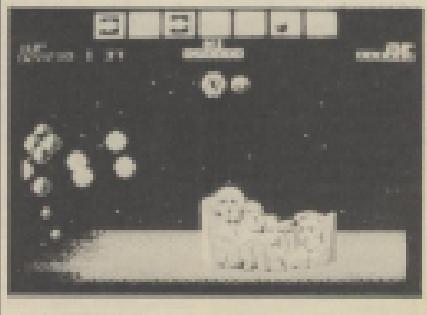
In other countries, for example Sweden, Norway and West Germany, VDU users are protected by statutory health and safety legislation. But in the UK there is no such legislation, only employer-specific agreements.

"We can't understand the reluctance to have VDU users to current standards. It's very important that they are," said campaign writer Irene Hartman.

Hartman wants to see all VDUs shielded against electromagnetic radiation at the point of manufacture.

"And all equipment should come with an anti-glare screen and a detachable keyboard," she said.

The report is available from the VDU Workers' Rights Campaign, City Center Project, 32-35 Featherstone Street, London EC1.



DIARY
DATES

MAY

8-10 May

The Electro & BBC Micro User Show

New Horticultural Hall, London
Details: Software, hardware and peripherals for Acorn's machines.

Prices: £3 adult, £2 children, £1 discount for advance booking
Organiser: Database Exhibitions, 061 455 9833

JUNE

12-14 June

Commodore Show

Marsden, Huddersfield
Details: First public showing of Amiga and 4000/5000 Amigas
 Prices: £3 adult, £2 children
Organiser: Database Exhibitions, 061 455 2391

30 June-2 July

PC User Show

Olympia, London
Details: Hardware and software for all users of IBM PCs and compatibles
 Prices: £5
Organiser: EUMA International Exhibitions, 01-882 1161

JULY

10-12 July

Amstrad Computer Show

Alexandra Palace Pavilion, London

Details: Displays and demonstrations of all Amstrad hardware, software and peripherals for Amstrad computers

Prices: £3 adult, £2 children, £1 discount for advance booking
Organiser: Database Exhibitions, 081 455 9833

Please, check and amend as shows can vary, and you are therefore strongly advised to check with the show organiser before attending. Popular Computing Weekly cannot accept responsibility for any alterations to show arrangements made by the organisers.

Off the Hook follow-up tape to aid NSPCC

A CHARITY tape is set to be launched this summer "possibly in June".

The organisation behind the publication of the tape is being co-ordinated by Red Cossens of Addison, as a follow-up to previous ventures, Softfile and Off the Hook.

"The compilation is in the final stages of assembly," said Cossens. "It will include Acorn by Argus Press, Digital's Right Quirks, Realtime in Spectrum

(U), and Gemini's Money on the Am, so far, and there will be ten titles in all."

The compilation has been put together in conjunction with the NSPCC, which has donated packaging, and will sell the tape in its own stores. It will also be available in normal computer outlets. The compilation will be available for Spectrums, Commodores and Amstrad machines and full details will be available in the next couple of weeks.

So far, the software industry has raised more than £200,000 for the NSPCC, mainly from its Off the Hook last December. But Cossens says that about 10% of the money pledged by companies has still not been paid.

"I hope that we'll raise more than £100,000 for the NSPCC next Red Cossens. "That will make it the third year running that we've raised over £100,000 for charity," after Softfile and Off the Hook."

IIGS word processor out in UK

MGA Microsystems is selling GraphWriter for the Apple IIGS from Cambridge Computer Datasys.

GraphWriter is a page layout program, incorporating word processing and drawing functions, all mouse controlled. GraphWriter can also be ported over from other programs such as PageWrite Plus.

GraphWriter costs £149.45 inc VAT. Details from MGA Microsystems, 140 High Street, Tunbridge Wells, Kent TN30 6HT, 0896 4276.

Audiogenic needs programmers

AUDIOPUBLISHING, admitting that it is no longer in the top ten of software companies, is starting a recruitment drive for programmers.

The company is offering an Amiga 500 for any programmer in tests on whose program then makes the top ten in the OMEP software charts. An Amiga 2000 goes to any programmer whose product makes it to number one.

Audiogenic can be contacted at 12 Children Enterprise Centre, Station Road, Thame, Oxfordshire, OX9 0BB.

Silent Service banned in West Germany

THE simulation game Silent Service, by Microprose, has been banned from open sale in West Germany.

The ban comes under the Youth Dangerous Publications Law legislation, apparently Silent Service which simulates a World War II submarine confrontation to realism.

The decision means that the game has been relegated to regulated outlets such as sex shops.

Microprose's president has

Major Bill Stealey of Microprose with some of the company's products

stealed plans to appeal against the ban.

■ This episode has moved into the hardware market with the announcement of a second joint venture agreement with a US company.

Following last month's deal with Origin, Microprose has signed up with Sunbeam, to distribute a range of joysticks and peripherals, including monitors and accessories such as disk storage drives and printer boards.



TECHNOLOGY SO ADVANCED ...



ONLY FROM SILICA

PRICE MATCHER ATT - Only From Silica

DEDICATED SERVICECENTRE - Only From Silica

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NEXT WEEK

Load It

Help is at hand for all users of Commodore's C64 database recorder. Load It claims to solve alignment problems once and for all. Chris Jennings checks it out.

Spectrum keyboards

Anthony Field takes you through a DIY project to build your own Spectrum keyboard. If you're still struggling with the rubber keys, or even on your hands and knees picking up loose keys from the Spectrum Plus, this could be the article for you.

Software

Everything You Ever Wanted To Know about Graphics, the Universe and Everything on the BBC, Or... That's a product that we had out just how comprehensive it is. Paul Mason II by Amstrad, an assembler and monitor for Amstrad CP/M Plus.



Amstrad DMP4000

Tony Randle tests Amstrad's latest printer, promoted for the PC1602 range, but compatible with any micro with a standard parallel printer output.

Programming in C

Karen Garske continues his series on programming in C, taking you further into programming techniques.

Z88 DELAYS CONTINUE

Sir Clive Sinclair's Z88 portable machine is suffering further delays and first orders are not now expected to be delivered until May. However, Sir Clive is already talking to retailers about the possibility of stocking the Z88 in the summer.

The Z88 - yet to be delivered

- has put the delays down to merging the software suites together as a whole. "We still not complete - we've got the circuits, now they need to be merged into one."

Sir Clive would not reveal how many orders had been placed

for the Z88 so far, but he did add that he was setting up a second production line for the machine, in addition to Thorn Electronics.

"The deal hasn't been signed yet, so I can't name names at the moment, but the second line will be there," he said.

Locoscript II now due in mid-May

THE "improved" release from Locoscript Software of Locoscript II, the long awaited upgrade to the word processing software bundled with the Amstrad PCW machines (see Popular Computing Weekly, April 17), is now scheduled for mid-May, with the first copies going out around May 12.

According to Locoscript, all those who have already ordered the program will have been informed by letter of the price-de-spatch date, and it was emphasised that no changes would be made until that time.



Mastertronic drops Melbourne's Gadget

FOLLOWING the move, last week, of the majority of the Melbourne House staff to the Mastertronic Paul St offices, came an announcement concerning the fate of the Melbourne House game, Inspector Gadget and the Circus of Fear. Inspector Gadget, which had reached an advanced stage of production, with review copies already sent out to the press, has been withdrawn.

According to Mastertronic's Frank Heinen, the reason being found the decision was simple:

"It wasn't as good as the original Mastertronic game - so we couldn't justify asking full price for it," he stated.

Programmed by Australian software house System Software - author of much of the Melbourne House output - Gadget was an arcade game based on a French cartoon called

character, and according to Heinen, System has "accepted the decision as far".

The software industry has not seen the last of Gadget however, as the license has been maintained and another game based on the character will be written by Beam, with release around the time of the PCW 8000.

Heinen continued, "We're committed to producing paper software from Melbourne House," adding additional publicity, "it would have to be super to be as good as Mastertronic."

■ The last two arcade machines from Arcadia, the new Mastersound, financial concept designers, have almost been completed - including a product under the name of Rockford City and system's Hotline to details.

RPGs in new TV series

ANGLO-TV is to transmit a television series on role playing games in September. The series will take the form of an actual game, Knight Man, being played on air.

Although it will be screened during the late afternoon, Anglo says it will attract a number of adult viewers.

Computer game rights to Knight Man are expected to be announced within the next week or so.

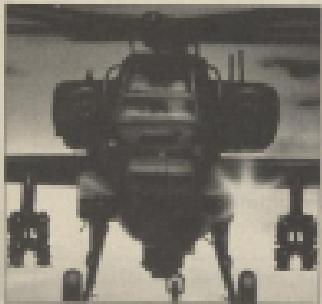
Electronic Arts gets Batteries

ELECTRONIC Arts has acquired Batteries Included, the Canadian software house best known for its Rapport word processing package.

The deal should make Batteries' products more readily available in this country. Electronic Arts recently set up its own office in the UK (see Popular Computing Weekly, March 27).

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CRIME AGAINST COMPUTERS

Computer crime is not an area that most people take seriously. But quite a lot of damage can be done by computer criminals, and, as John Brissenden reports, the trend is growing.

They call it "white-collar crime". A lot of people don't take it seriously until it happens to them. But the problem is growing all the time.

It used to be a relatively tame form of company fraud, but it now involves closely linked with computer crime - fraud, theft, arson, sabotage, burglary or other misuse with, or of, computer systems.

The effects of computers are growing in all directions. There are more systems in use. Computers are handling more information. They are becoming more powerful and complicated. And more people are using computer systems.

So a major net result of all these factors is the growth of computer-related crime.

The areas where most computer systems are used in within companies' business systems. So it is here that most computer crimes are committed. Some are plain fraud, committed for financial reasons.

But others are more concerned with the computer system itself, and causing damage to it. This could be sabotage or malicious damage by someone outside the company, or by an insider. This could take the form of physical attack, e.g. arson, or more often gaining access to restricted information, or even tampering with programs so as to cause real and untraceable internal damage to the system - hacking. A third major area is software theft, or piracy.

Computer-related crimes are hard to define, hard to quantify, and even harder to spot. Why?

Detective Inspector John Austin is in charge of the computer crime unit at Scotland Yard. His team is part of the company fraud department of the Fraud squad, and it's their job to deal with a whole range of computer-related offences.

It is the kind of crime that has a high public profile. It makes good news copy - and it's good box-office news as well - the young millionaire who gets caught fiddling millions of dollars out of a company, or the teenager who accidentally starts World War III on his micro.

But although the reality is sometimes nearly that spectacular, most of the time it may be mundane, or even unknown.

It could be the case whereby a fraud has been committed, sometimes for large amounts of money, and it just so happens that a computer system is the vehicle that

just processes through the information," says Austin.

"We've had several instances where somebody's stealing money from a local

"It's the kind of crime that has a high public profile. It makes good news copy, and it's good box-office news as well."



Detective Inspector John Austin, in charge of computer crime, Scotland Yard.

government authority and they're in a Department of the authority that deals with salaries and wages, and they just write out the form. Spurious form, spurious account, spurious personnel, and they'll just feed it in. Now it's open to interpretation as to whether that is a computer crime or not."

Another problem is that if a company discovers that an employee has been carrying out a fraud or other crime through the computer system, they are often obliged to report the fact to anyone, including the police.

Some industry watchdog bodies, such as the Federation Against Software Theft, have put out estimates. FAST reckons that software theft or piracy alone is costing the industry £150 million a year. But Austin agrees that certain factors make it virtually impossible to gauge the size of the problem.

"How long is a piece of string? I think it's fair to say that there is a certain reluctance to report crime that's computer-related, more than say a person being mugged in the street or having their home broken into, because there are different considerations from the point of view of the victim... a certain amount of guiltiness or embarrassment, which can reflect itself back on the victim, whether it's a company or a person."

"Or I think that that's an estimation of perhaps why there is some reluctance, although it's no good asking for hard evidence of it."

"One thing that I'd warn people about a little - I think that there are people who work in computing who are addicted to it, in the sense of they just won't leave the damn things alone."

"They'll play chess in their lunchtime, they'll go home, they sit and play Space Invaders all evening. There's a danger there people like that, because they fit a certain sort of stereotype."

"This is the dilemma - if you want the bright or bright young whizzkids, he more than likely will be hooked upon his subject. But there are dangers in people who get hooked upon computing."

"Do they consider the possibility of being detected?"

"I don't think they do. If there is one thing that's rather unique about people who commit computer crime, it's that they tend

continued on page 148

SPECIAL FEATURE

■ continued from page 18

"The area where most computer systems are used is within companies. So it is here that most computer crimes are committed"

to be first offences. But that does tend to be rather unique with this sort of crime."

So how can the police attempt to combat computer crimes? Do the police Crime Prevention Departments have a role?

"They have given advice to companies, but the sort of crime prevention area that they cover is slightly different to ours. Whereas they will advise the physical side of securing premises, vehicles, etc., we tend to look and talk more about the legal and procedural side.

"It's talking about access levels, password controls, data processing procedures, encryption, what encryption to use if it's necessary, supervision of personnel.

"And I believe in saying 'open'. What I mean is that if I make a point, for instance about the use of passwords, we are in a position to give an example perhaps of an instance where that has led to problems.

"So it's an very well and good people talking about 'One should do this, one should do that', but if you can show people by example, although not named example obviously, of the sort of things that have occurred, it brings it home to them.

"Even if you had a large establishment where you have a computer operator who's separate from a computer programme, in my experience you often find that the operator is studying at night school to be a programme anyway. And the programme is studying at night school to be a systems analyst, and the analyst is plugging to be a DP manager.

"So one never takes it for granted that because somebody is a mere data entry clerk that they don't know how its load is chucked into a machine, because they probably do.

"I decided four years ago, that if we were going to provide the public with a service in the police force that was going to give their specialist expertise in the field, that it would be necessary to put ourselves on something of a public platform, by going out and talking to people in the industry.

"We needed to make them aware of what we have as the dangers and risks. The sorts of things to look for, to make them aware of the losses that can be sustained from deliberate attack on a computer system, and at the same time, to tell them how that we are fully equipped to investigate crime, which is our primary role. Full use to other services.

"And judging by my postbag and the telephone calls that we get, the latter has revolutionised the former."

The area of computer crime that has had most coverage recently is hacking. The unauthorised access to disk. Austin uses this as an example of how the law severs convictions in this very difficult area. But is hacking as much of a danger as some people believe?

"I think that it's probably more hype. The fact that it's generated tends to encourage people to try and do things that they can't do.

"Your normal manager who's got a BBC micro and plays games on it, as quite a few of our young ones do, might boast that and then they buy a monitor and suddenly they're interested in public exchange networks, and probably there, they have more capability than they do.

"I mean there's a lot of hype been generated about so-called serious systems like banking systems.

"Now whatever technology is produced and whatever enhancement one puts to it, a micro it is not possible with your BBC to start hacking into biggert bank - you can't do it.

"The Forgery and Counterfeiting Act of 1971 makes for the making of false instruments, with the intention of deceit, whether it be manual or electronic. And that's the full span which we prosecute hackers.

"Now what I mean by that is let's say you and I work for the same company. You have got access to our stated payroll. But I know what your password number is. Or I do a combination of things to try and get your

password.

"Immediately I attempt to do that I cannot logon to the database.

"Now this is particularly pertinent today to those ATM machines, these cash dispensers. A lot of people use under a pseudonym here. If I find a card in the street, if I don't know what the number is, there's no way that I'm going to find out what the number is. But let's just say I'm tempted by this but cast into a machine and as I don't know, I'll log on in, two, three, four.

"What people may not realise is, that by doing that, putting in one, two, three, four, they are attempting to forge an instrument."

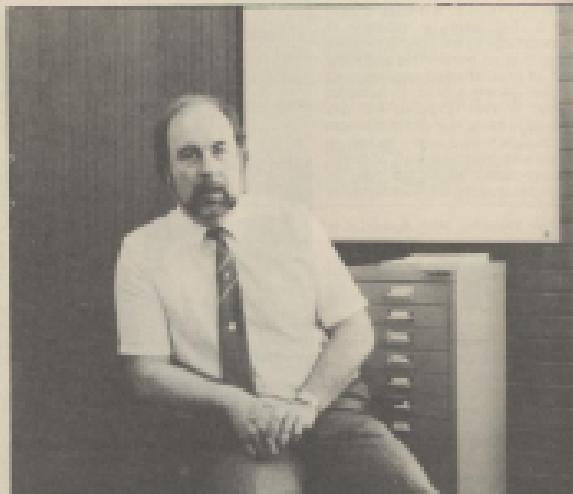
Finally, how does Austin think the police, including the police, can arm themselves against fraud or damage through their computer products or systems?

"It's knowing what to look for, there is a certain amount of knowledge obviously that has to be gained on part of the investigator to know what one is going to go for.

"I investigated a course at the National Police College specifically to train officers from other forces. The purpose of that is so that each police force in this country will have at least one officer who is computer literate.

"All we're doing is taking experienced detectives and try to keep them up with some computer knowledge sufficient, we hope, to be able to deal with the material requirements of computer related crime.

Bearing in mind that some people spend their whole life in the industry and still don't know it all, there's no such thing as a computer whiz kid, they do exist!



Austin: "We are here not only to investigate crime, but also to offer advice."

Let your PCW do the talking

Lacking an RS232 interface, the PCW hardly seems an ideal micro for communications. Peter Worlock tries out Miracle Technology's WS4000 modem, which could change all that

Computer communications has come a long way in a short space of time.

It's always been the best thing since the computer itself. The majority of users look on it as something potentially great - with a heavy emphasis on "potentially".

But it's easy to overlook how far things have come in a few years. It isn't so long since most manufacturers offered modems, all operating at 200 baud, and the only thing to connect to was an enthusiastic but amateurish bulletin board.

Now there are hundreds of bulletin boards, all of them enthusiastic, but the majority of them highly professional.

There is also a host of commercial services from the ubiquitous Prestel to electronic mail facilities.

And, not least, there has been constant development of the modern telephone. Today, the auto-dial, auto-answer, multi-line, "intelligent" modems are commonplace.

For some computers certain features suited to communications than others, and if you had to pick one that looked like a loser in the contest stakes, you'd probably tag the Amstrad PCW.

For one thing it lacks an RS232 interface - the primary requirement of would-be communicators. And the lack of colour and separate graphics put in behind the head for systems like Prestel.

Now PCW owners have been given a boost by Miracle Technology. The pinhead-modem maker has released a special version of its award-winning WS4000 intelligent modem.

When coupled with a good software package like Supersoft's ChatChar (see panel), the WS4000 allows PCW communications to hold their heads high.

Features

Instead of the normal RS232 cable, this version of the modem has a ribbon cable terminating in an edge connector that plugs directly into the PCW's expansion bus.

This means that fitting the modem to the system is simple, and eliminates the need for an extra interface.

Miracle Technology has established a reputation for quality in the modem market, and this version of the WS4000 will do it no harm.

The modem is housed in a rather startling shade of red, but is well-built with solid connections to the serial, phone and power cables. All cables go into, and emerge from, the rear of the unit which also features a reset switch.

The modem itself is of a size and shape to comfortably accommodate a telephone on top, but the ribbon cable is of precisely the right length to give you only one possible position - immediately next to the right side of the modulator.

Since this is where 99 per cent of PCW owners will have their printers, some rearranging of the desk will be necessary.

Pressing the reset switch, and turning the power on and off at the mains is as much as you can do from the outside. Everything else is controlled through software. For this reason, you'll need a decent software package to get your money's worth from the hardware.

Along the front of the modem is a row of status lights. These indicate power on, high speed mode, on line, terminal ready, request to send, clear to send, carrier detect, send data, receive data, and auto-answer mode.

“Miracle Technology has established a reputation for quality in the modem market, and this version of the WS4000 will do it no harm”

These lights may be off, blinking or steady on, depending on the modem's activities. Once you become familiar with them you can determine at a glance the status of the modem, and whether it is functioning as expected.

You can watch them pulsing out the number being dialled, and you can also see

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Precision sets new records with Superbase Personal

Precision Software, best known for its Commodore 64 word processing and database programs, has turned its attention to the 16-bit machines with Superbase Personal. Christina Erskine finds it combines power with ease of use.

Precision Software is probably best known for its Superbase and Superwriter database and word processing packages for the Commodore 64. Therefore it would be a logical assumption to see Superbase Personal for the Atari ST as simply a conversion of the C64 product. Logical, but according to Precision's managing director John Tranmer, completely incorrect.

Tranmer - and he should know, his brother Simon wrote both programs - says that Superbase Personal has been written

entirely from scratch. The name Superbase being duplicated only to give the product a familiar identity with potential buyers.

Superbase Personal runs under GEM (a GEM-based version is also available for PC compatibles) and uses all the familiar drop-down menus, etc., running in medium and high resolution modes only.

Getting going with Superbase is rather deceptive. It's switchingly simple, and before long the program's power. You

might expect a menu-driven slate

East to be complicated by sub-menus, sub-sub-menus, and no Cancel option, and where you selected it, but all. Superbase's capabilities are accessed by the six menus at the top, where you would find the GEM Desktop options, and a string of easily understood icons at

the bottom.

For instance, once loaded, Superbase gives you the choice of Desk, Project, Record, Process, Set and System menus.

Desk simply gives you the copyright message. Project is the menu you will need straightforwardly; its options deal with opening, creating, editing, etc., your files and indices. On start up, many menu options are unavailable; these are shown in tilted rather than black type.

The Record menu contains options for advertising your individual database records, or adding to them. Process deals mainly with importing files from other programs and printing labels, but enables you to alter the way in which your database is laid out. System gives you printer options, a directory list, etc.

In addition to this, you get the remarkably easy-to-grasp menu at the foot of the



screen for flipping through, viewing and creating your records. The menu comprises items covering more than a passing resemblance to the controls on a tape recorder:

'last' - shows the last record in the file, <-> one immediately previous, >-> is a fast forward - display all following files, <-> a 'record' - display all previous. There are also 'pause' and 'stop' functions.

The 'F' key allows you to search for a particular file by typing one value from the field in the search you need, and the program will bring the required record up on screen. However, this key symbol for manipulating your databases is confined to the right side.

This is the 'filter' option, which enables you to view, use or print out your data according to a set of parameters which you determine. You select which of your fields you want to manipulate and then how you wish them manipulated. The symbols, as shown in the screen picture, are mainly self-explanatory: the same as greater than, greater than or equal to, lesser than, lesser than or equal to.

LKE applies to text strings, < / >

numbers. You set the parameters themselves by typing in the information in the Value box; for example, 'Lastname LK01' [A-D] gives you all surnames on the beginning with A, B, C or D.

Creating files and records/templates is also made easy. The number of fields is limited with the restriction of 255 characters per field, although surely, for most people, numeric data can be rendered in a number of ways according to how you wish it presented on-screen, similarly with dates.

One of Superbase's most attractive features is its ability to port/share files from other packages. For text, these must be ASCII format. While existing, however, in Superbase's ability to incorporate pictures from graphics programs - so long as they run under Unix.

The most obvious uses for this are plans, charts, or pictorial representations of statistics which you may want to incorporate in standard letters.

Conclusions

While I have relied about nine of use, it is

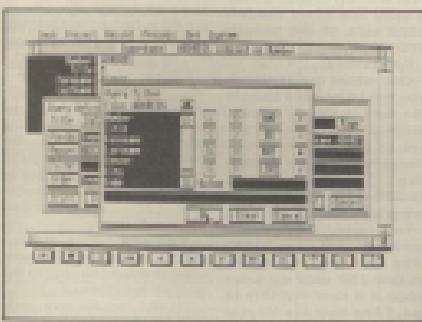
worth noting that the Superbase manual (which is clear and thorough with plenty of tutorial sections) does not attempt to explain databases if assumes you know the terminology and how databases work.

This article by no means exhausts the program's options and capabilities, but attempts to give an overview of how it works and some features.

I found it versatile and comprehensive, and incredibly easy to get into. Obviously, this is due in part of Unix and the simplicity of mouse control, but also credit to Precision for not complicating the matter.

If you feel you could do with a database program for your Amiga, PC or compatible, just contact Alkal 57, Superbase Personal is worth closer investigation.

Program: Superbase Personal **Prices:** Amiga £57, Commodore Amiga, IBM PC/compatible with Unix operating system, eg, the Amstrad PCW/PC, Apple PCs and ST Compaq, Amiga £149.95 Supplier: Precision Software, 8 Park Terrace, Winchester Park, Surrey KT14 7UZ.



Screens from Superbase Personal. Above: note the 'last record' entry bottom right for viewing your records. Right: the filter screen enables you to sort records according to a large number of criteria.

Filter	
Filter ADDRESS	
Title	<input type="text"/>
Forename	<input type="text"/>
Lastname	<input type="text"/>
Street	<input type="text"/>
City	<input type="text"/>
Code	<input type="text"/>
Country	<input type="text"/>
Value	
IE "TOM" OR Country LIKE "USA" GERMANY"	
<input type="button" value="OK"/> <input type="button" value="Clear"/> <input type="button" value="Cancel"/>	

Guide to databases

A database is basically a comprehensive filing cabinet, used for storing records. In databases of any power whatsoever, this information can be utilised or sorted according to the various headings you've used within each record. You could, for instance, list all your friends living abroad at customers still owing money after a year off.

Many databases have an integrated mail merge or label printer within the package. You can then print address labels of all, or some, people on your database according to the index you have made.

File Collection of records running under the relational program.

Records Similar to each file or sheet is a single column.

Fields This is the name given to the headings within each record. For example, in a simple address book database, your fields might comprise 'first name', 'last name', 'address' (subdivided into, say, street, town, district, country and post code), 'telephone number', etc.

Relational database A database which allows you to sort your records according to multiple factors. For example, print out all records showing people whose surname begin with P, living in Yorkshire, have 2.4 children, plan to take a holiday in Spain within twelve months, and now live in a dog.

Having the ability to print out all records with people whose surname begin with P is not enough to qualify as relational. Superbase is a good example of relational databases.

Integrated database A database program which can use and incorporate information from other programs - usually the database will be part of a suite of programs in one package - and whose files can be incorporated in the other programs in the suite.

Mail merge Printing standard letters, labels or forms where only the name and address, for example, need be changed from sheet to sheet. You specify whose name is to go in the 'page' and each letter, addressed to each individual, is printed out.



with **Ken Gammie**

The Sord connection

All Sord, of Willesden, London NW11, UK.

QI've just bought a Sord colour monitor (second hand) which I'd like to use instead of a TV, with my Spectrum and 48K.

I have now discovered that there is a different plug on the back of the monitor to my composite video phono (S-VHS) plug on the Spectrum and certainly the 48K. I realise that the S-VHS output is monochrome and have made the well known 'test' from the resistor modulation as well. This appears as a phase socket at the side of the Spectrum.

As I got the monitor cheap, I was too thrillled to check it out. I'm not sure what type of signal the monitor expects.

I enclose a diagram of the plug which appears at the back of the monitor. The model number of the monitor is SDFP-140.

I hope that you can help me with this problem by supplying a pin-for-pin diagram or something that I can make into a converter lead if that is what is needed. I'd really like to find some way of making both computers work with this monitor, but any help on either would be appreciated.

I might be able to afford the Adaptec PCB Spectrum interface if necessary — will you comment on this, or suggest some other alternative?

AI don't know what the connections are for this monitor. However, there is a way of finding out by educated guesses. If the model for a PEEK, then there will be Red, Green, Blue, Sync and Ground connections. If it is composite video, there is just composite input and ground. In any case, however, have both since there are enough connections available.

The way to find out is to take the composite output from the Spectrum, and split it into its three component parts, video and ground. If you connect the ground to the casing of the socket, with any luck, this will be ground. Next, take the video output from the Spectrum into each of the holes in turn.

If you get a red, green, or blue picture on the monitor, then you have found the R, G, or B inputs respectively. If you get a picture, then you will have a composite input. Once you have this, just the ground wire briefly into each of the other holes to find the ground input. The picture should stabilize when you get the correct combination.

By the looks of the socket, it is more likely to be RGB than composite so, having found the PL, MG and G inputs, you need to find sync. This can be done by connecting the GL's RGB lines to the appropriate holes, and then poking around with the sync line to get a stable picture. If it is RGB only then the Adaptec interface will be needed to get the Spectrum to work.

Make sure that any test connections you make are only brief, the voltages could damage and it is unlikely any damage can result if you are careful.

If all else fails, carefully pull, hopefully, note in and tell me what the connections really are so that I can print them.



In there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem, Post it to Ken Gammie and every week he will pass back as many answers as he can. The address is Post 8 Poste, ACB, 121-123 Little Newport Street, London WC1E 7PP.

Baffled by the BBC bytes

Dear **Ken Gammie**,
In
Hove, East Sussex

QI have a Master 128 with one 3½ inch disc drives, a ZX1000 printer and a VDU. In the March 27 issue of Popular, you published three programs for the BBC. I have just entered the sideways print utility. Having just spent the last hour double, triple, and quadruple checking my typing, could you please clarify a couple of points of interest to me:

1) Why does the program stop at line 180 with 'Input at line 180'?

2) On re-entering the line at 180 with LINE =180 (not ACPO), it then prints a solid line down the left hand side of the screen and stops.

I've baffled.

One other point which you might be able to help me with is this: if I deliberately omit the semi colon in line 188 between the zero and the F so that the line reads 18800:0F&2001:1A,B, the program stops with no error code, namely the message 'at line 180'. Why the machine prints at line 180 with no error code is a mere mystery to me. I find that the Master does this reasonably regularly and wondered if you could offer an explanation.

AThis is not easily my department but, just for once, I'll help out. Your problem is mainly due to the fact that the listing is wrong. You can check this by changing line 180 to 18800:0F&2001:1A,B, then the PLA, etc.

These commands need to be placed further down since V is corrupted by the PEEK call. Change line 180 to PLA:

LINE 180:PLA,loop,out JMP ACPO

Line 180 reads LDX #1100 ACPO#100 which will only give you the bytes you put in before the ACPOV. This is because it is impossible to put a value larger than 255 (FF) in the accumulator (A).

The program works by using the LNE command to move the string you want to print at the location pointed to by 18286:A, etc., using indirect addressing (18286:L1V) each character in the string can be read.

The definition for each character is then obtained with the COMWORD (18FF1) 10 command and stored at 18200 onwards. The character number for this cell is placed at 1829, in all the start of the definition buffer.

The next section of code loads each character on its side by shifting each bit of a row into a column of the definition of character number 255. Character 255 is then printed followed by it stops and is left to repeatition for the next one.

The use of character 255 is only you got a line down the side of the screen (Character 255 is a solid block). As it stands, the program was not converting the definition properly. The LINE command uses the vector 18200, 1821 to point to the second side, basically bad command.

Your second point, concerning the 'at line' with no error code seems to be due to the program being at fault.

Usually, the no error code situation only crops up when using machine code routines from other programs.

If the machine code does something unexpected, the Basic interpreter generally hasn't got a clue as to what has caused the error and so, cannot assign an error message to the fault.

For example, if you run the sideways program so that it sets up the LINE command and the 18400+48 (put an RT1 command in), and then GOTO 180, you'll find the no error situation occurs since the machine code is doing something rather unexpected.

Incidentally, if I try taking the colon out of line 180 then as I get in a syntax error at 180, this could point to a difference between the 128 and the user BBC II.

C. why it's so good

Last week, Kenn Garroch began his series of articles on programming in C. This week: putting C to work and playing games.

The easiest way to learn and understand a language is to use it, and see it in action. C programs are very structured, that's to say that they are always built up in a set framework. Probably the simplest program is:

```
main()
```

```
{  
    printf("Hello, world!\n");  
}
```

All this does is print out the message in quotes with the `printf` function. Note that commands are always in lower case and the last line is `main`. All programs have to have `main` if they are to compile and run correctly. The functions, functionally, do anything in the program but is usually placed at the start.

The next line contains a `{`, open curly bracket. This is used to denote the start of a section or block of instructions. In this case the start of the program. The `printf` function on the next line is used to output characters to the screen starting from the next cursor position, subsequent `printf`s simply follow on the same line.

To get the program to move the cursor around the screen, forming characters used in the word. These are included in the quotes and take the form `\n` or `\f` (newline, form feed or clear screen). It is used to get a single back slash since \ by itself is a null or no character.

The end of the program is denoted by the close curly bracket `}` which is also used to end a section of code. The following example shown here is a program can be split to make it easier to understand with a function being defined separately from the main program itself.

```
main()
```

```
{  
    int i;  
    int j;  
    printf("The square of %d is %d\n", 4, 16);  
}
```

```
sqrt()
```

Here the function `sqrt` is defined separately from the main program and used in the `printf` statement. The numbers to be printed are inserted where the %d's appear in the

quotes. This gives a neat way of displaying numbers and if you insert %f instead of %d, the number is printed in hexadecimal. %c is used for characters.

The program also shows how variables are set up and used in C. It is defined to be an integer (a number from -32767 to +32768) and then `for` on in the main program is always an integer. All of the usual functions, `+=`, etc, are available to use, bearing in mind that they will only decimal when using integer variables. For decimal numbers, the `float` keyword is used.

Other simple data types are `char` for single characters, `short`, `long` and `double`. The last three depend only much on the computer, so some they do not

```
/*Demonstrate various output statements  
of text. */  
  
int main()  
{  
    /*printf("%d\n", 10);*/ /*Comments out previous printf command  
    because it would print a blank line.  
    printf("Hello world\n");  
    /*printf("A space is 32H, a = 65H, M = 77H,\n     * parenthesis, * is 40H and asterisk *\n     * is 42H.\n     * printf(\"%c\\n\");\n     * \\n is a new line character.\n     * printf(\"%d\\n\");\n     * \\d is a new line every time printf is run.\n     */  
  
    /*Comments out the first two printf's  
    because they are both inside the braces. Since  
    there are two braces within the braces, they  
    need to be made into a block starting with  
    brace ending with }. The while command  
    continues looping until the argument  
    (< -10) is found, in this case, exits when i  
    is equal to 10.  
    The other more common, and perhaps  
    vital, structuring command is if. In C, this  
    takes the following form:  
    if(expression)  
        do this if expression is true  
    else  
        do this otherwise, though this is optional.  
The simple game program (see box) shows  
all of the above commands and ideas, plus  
a few others, in use. Notice how the AND,  
OR, NOT, and equals differ from other  
languages. Logical AND is AND, bitwise AND  
is &, logical OR is OR and the != before == is not  
equal. For equals, == or = are used, so  
in a test, == leads for equality, != as is  
usually the case. The program will run in any  
C, just type it in and follow your normal  
computer commands.
```

This forms a 'for' loop for the following statement, in this case the following line. If more than one line needs to be repeated, then enclose the set in {} to make them form a block. The `for` has three parameters following it. The first defines the start value of the counter, eg. starts with the value 1. The next contains the inverse of the end condition, ie keeps looping until this is false. The final part sets up the increment to be used at the end of each loop. This could be `i=1` but the C editor will do this if it is free which means exactly the same thing. For `decrementing`, `-=` could be used.

There is no separation of the rest of the code from the loop if it starts a structure. All statements and assignments to make sure the computer knows what are units and the next one begins.

An alternative way of looping would be in `while`. To make the program use this requires the following changes: take out the first `for` lines and insert the following in their place:

```
for(
```

```
    i=0; i<10;
```

```
    {
```

```
    printf("The square of %d is %d\n", i, i*i);
```

```
    i++;
```

```
}
```

In this situation, i must be set up before the loop begins and must be incremented within the body of the loop itself. Since there are two braces within the braces, they need to be made into a block starting with brace ending with }. The while command continues looping until the argument (< -10) is found, in this case, exits when i is equal to 10.

The other more common, and perhaps vital, structuring command is if. In C, this takes the following form:

`if(this if expression is true)`

`else`

`do this otherwise, though this is optional.`

The simple game program (see box) shows all of the above commands and ideas, plus a few others, in use. Notice how the AND, OR, NOT, and equals differ from other languages. Logical AND is `AND`, bitwise AND is `&`, logical OR is `OR` and the != before == is not equal. For equals, `==` or `=` are used, so in a test, == leads for equality, != as is usually the case. The program will run in any C, just type it in and follow your normal computer commands.

POPULAR Computing WEEKLY

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supplement

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WIFEY

Housewife is a housekeeping program from DDF Software. A real housekeeping program. Nothing to do with computing utilities. With QL Housewife, you can make up a personalised shopping list based on your usual shopping habits, and access a choice of three recipe programs, for starters, main courses and desserts. You can name any number of guests from 1 to 30, and you will be given the recipe of your choice with the correct quantity of ingredients, all quantities in metric and imperial, cooking temperatures and an option to print out.

Obviously a menu driven program Housewife costs £14.99.
DDF Software, 11 Picard Close, Bramley, Leeds LS26 5BL. Tel (0113) 681561. □

REVIVED

PQL Software of Birmingham is still adding programs to its list, and now has over 20.

Recent additions include Lazarus, a disc recovery program which operates on all or any lost files (and not only, as the subtitle might perhaps expect, on North), £25, and an invoice generator for £20.

Cash Tracker, a debugged, extended and speeded up version of the original Quotient Cash Tracker, is now available to new users at £20 as well as an update to registered users at £10.

Name And Address is now available on disc as well as microfloppy, in standard Archimedes or Archimedes versions. The newest

Never forget, wise computer owners say, that the QL, for all its faults, was the first affordable 68000-based micro. Apart from the Amiga, it is still the only 68000-based micro offering true multi-tasking, the Amiga 27 doesn't.

Support for the QL, then, is still strong, from users and a small number of third party software and hardware manufacturers.

In this supplement we're looking at Digital Precision's replacement keyboard - IBM quality for your QL? We also have an exclusive preview of the desktop publishing software package, which combines power with ease of use.

CD software from Rainbow micros, and Falconsoft's polygonic mouse system, among many others, go to prove that the QL is far from obsolete. □

feature of this popular program is a "secure" procedure allowing data to be backed up safely before the changes are finally saved.



PDQ!, 48 Frederick Street, Birmingham B1 5DE. Tel (0121) 231 2842. □

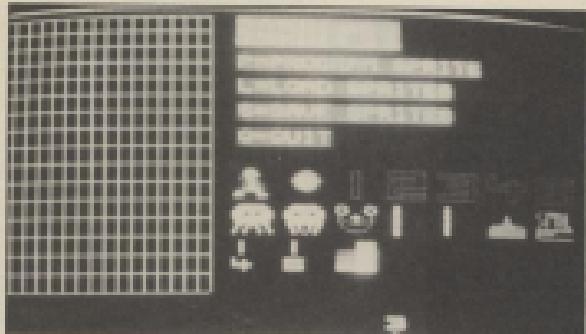
TURBO

Almost Consultants has produced a program which re-configures Quill to speed up the cursor, which, along with other small changes, effectively speeds up the whole program and - no small matter to anyone writing more than the odd letter - increases work throughput.

QL TurboQuill costs £15 and can be ordered from Almost Consultants, 10 Holly

Grove, Farnham, Banks, who can also provide more information about the program. If ordering, please quote the version of your Quill or that a matching TurboQuill version can be provided.

COMPU... Much does not work with TurboQuill - in all the default parameters of Quill have to be set up before the turbo program is applied - but the increase in speed is well worth this minor inconvenience. □

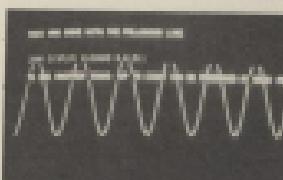


Iron Toolkit

SMILES

Sailing Software is still offering reduced prices on a range of software, including Sound Experiment at £1, Iron Toolkit at £5, Game Toolkit at £5, the Complete Toolkit (the two Toolkits mentioned plus Character Toolkit) for £10, and the machine code "multiviewed intervals" arcade game Blaster for £1.

Sailing Software, 10 Fir Road, Marple, Stockport SK6 7QH. •



Sound Experiment

CHAR-ED

Chared, by Colin Dye of Vista Bytes, is a font editor program designed as a utility to work with Toolkit II. The Toolkit ROM allows SuperBasic users to select character sets other than those included in the QL, as well as altering the pixel block size of characters. Shared, in addition to Toolkit's own facilities, supplies extra predefined character sets, the creation and editing of new fonts, printer change and use of new creation in SuperBasic programs.

The program is designed to be easy to use, with a system of menus and prompts

such that the user can learn to manipulate it quickly without continually turning to the manual sheets, which can then be clipped away in the QL. User's Manual for reference on the predefined character sets when needed. Re-defining characters and overcoming the limitation of the QL's character grid is covered in detail.

Carry Electronics is also offering the Toolkit II of EPROM, and Liberatas Software's QLiberator Basic compiler together for £74.

Carry Electronics, 880 St. Albans Road, Garston, Warrington, Cheshire WA3 6PN. Tel. (0925) 672181. •



• Char-ed - font editor program designed as a utility to work with Toolkit II

GROWTH INDUSTRY

Superplant sounds like another unlikely comic character, but is, in fact, a company which writes software on plants. Tony Held, a professional gardener for twenty years, found that his customers asked him such complex questions about plants, and gardening that he began to feel that he needed a computer to answer them all. He was then inspired to write a series of data banks, based on the Xchange archive data base package, which would give advice on the choice and care of plant groups.

The databases in the cover wild flowers for the garden, fruit trees and bushes, house and office plants, trees, shrubs and climbers, and flowering garden plants. Beside information about habitats, plant characteristics, soil types and plant needs, Mr. Held, who has a keen interest in conservation, has included notes about plants which are attractive to wildlife, and trees and hedging shrubs useful for planning environmental improvements.

The databases can be bought as a complete package for £20.95, any one of the programs with the basic gardening module for £11.95, and as additional packages for those who already have the basic gardening module for £5.95 each. The programs are available on 5 1/4 inch or 3 1/2 inch disks.

Superplant Software, Llanperis Nurseries, Llanperis, Tredegar, Gwent, Wales NP22 0PP. Tel. 097 421 223 (from 15am to 5pm). •

LUCKY BAG

Pyradise Software is starting to release a library of cartridges featuring all kinds of useful programs, programming tips, mind utilities, routines and games set in by professional and amateur QL users, particularly in SuperBasic. Called Bag of Tricks, the first two volumes contain respectively a character set, PRIMs and PRIMs, a screen compressor, a Basic version of Pacman and various utilities (volume one) and a set of routines for tracing files, drives in use and free memory space, some games, some Graphic Toolkit cut-outs, and more utilities (volume two).

Information about Bag of Tricks, and about publications for future volumes, from:
Bla Promotions Ltd., 28 Worcester Grove, London NW1 7PL. Tel. 01-588 2764. •

PUBLISH OR BE DAMNED

AN EXCLUSIVE REVIEW OF DP'S DESKTOP PUBLISHER BY HELEN ARMSTRONG, AND RON MASSEY ON HALLMARK'S Q-WRITER FONT CREATING PACKAGE

Put simply, the purpose of a desktop publisher is to provide text and illustrations, arrange them to make a presentable page, and then let that page to be printed. It must, at the very least, be a step up from a typed page with a photocopy doodle. I would say that the minimum step up implies graphic capture, justified and unjustified column layouts, and a choice of headline characters in adjustable sizes. After all, you can do a balsa list with a good typewriter, a photocopier and some Letraset.

Desktop Publisher requires a 256 memory-expansion, and incorporates twelve graphic (headline) fonts and eight 48 text fonts as standard. There are 190 integral graphic symbols (including a choice of trees, for arborophiles) and 160 past break styles. What this latter means in reality is that you can use any of the graphic symbols as a paintbrush, as well as the standard shapes. The way it is passed for an almost bottomless supply of backgrounds, borders and patterns. The decorative fonts are proportionally spaced, but all character proportions can be modified horizontally and vertically, pixel by pixel, and characters' angles can be altered. All characters and graphic fonts can be merged with A4D, QL, and 308 options, inverted (wholly or partly), mirror imaged, layered, inverse faced (wholly or partly), magnified up to 10 times in either axis (this includes the cursor path), striped or striped, and rotated through steps of 90 degrees (sorry, no tilt...).

Extra fonts

The program travels on two cartridges which may well carry a few extra fonts. Extra fonts can be imported. Desktop Publisher will load any ASCII file, plus Quill files with non-ASCII characters, in fact, any the programmers C64 and Amiga keyboard, anything which can be translated into an uncompression mode. All fonts can be edited, or adjusted later by later during macros.

Text can be justified pixel by pixel, which allows for very accurate placement of annotations on drawings (horizontally,

vertically, sideways or even upside down) and carefully spaced text. Text can be justified, ranged left or right, or centred, made bold, italicised to the left or the right or inverted. There are four different styles of underlining, including double and single, vertical and horizontal ruled lines and boxes, columns to any width, variable line feeds on screen, and window governed cut, copy and paste over both pages. Not only does the page scroll, but the contents of any window scroll as well. The program is completely compatible with Quill, and performs the full range of editing functions on Quill texts. DP's preferred method of generating outside text and graphics, of course, are their own programs *The Editor* and *Eye Q*, which I'll be having a brief look at. Text can be generated inside the program, and in the smallest text size and maximum line feeds (without actually overlapping) each page can handle up to 10K characters. A full page of work stores in about 30K, or one microsecond.

As well as generating patterns and line graphics, Desktop Publisher includes clip art for pasting, and can import graphics from various sources including Easel and (if you have one) via a digitiser, all fully editable.

There are four different styles of screen cursor (partly for accurate editing, partly for fun), and a two-color vertical ruler appears on the main screen. A calibrated green grid can be called up. The working area scrolls, and pans, and can be joystick-controlled.

Access to designer screens is fully hierarchical, and any user who gets lost* or performs a wrong command inside the editing levels can get out safely and quickly via the esc key without damaging the work or causing the program to lock.

Naturally, DP's pride and joy, the Turbo Superdrive Computer, was used in writing the program, and C64 said "We had to insert great long loops in place to stop the program from moving too fast for people to feel comfortable with. And then Freddy brought us the Turbo update, and we had to put even longer loops in." More important than speed, to my mind, is



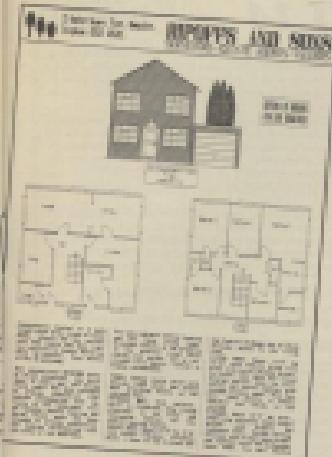
the very complete set of status reports, along with the font/graphic menus and instruction menus which are displayed to the right of the working area at all times. Although the program is fully menu-driven, nearly everything can be done with single keystroke commands instead. The cursor can be floated, and caps lock is indicated on screen.

Desktop Publisher supports two paper formats and four different print routines, printing A4 and landscape in both landscape and portrait, with vertical and sideways printing options for either. The printer driver is as usual directed towards Epson compatibility, but is recognisable for most other suitable printers (i.e., not dotmatrix) in both serial and parallel modes, and with multiple pass printing up to five times for a sharper finish.

The two packages which are being offered alongside Desktop Publisher, *The Editor* and *Eye Q*, have already been around for a while. DP stress that Desktop does not require either of these programs to operate but, obviously, the dedicated programs have more facilities than integral screen designers.

Eye-Q by itself costs £29.95, and is a freehand/line/rubberband style graphic generator. The basic functions are: paintbrush, airbrush, erase, fill, and rubber bands in circle/ellipse, line/arc or rectangle/block. Operation is by window menu and by single keystroke - a great many functions can be performed on the graphics screen by the latter. For instance, the size of the cursor (and therefore of the paintbrush) can be changed using CTRL W. CTRL T allows the typing of text characters over the graphics screen in various different modes, and the program incorporates a font editor.

Screens can be saved, whole or in part,



(window selected), compressed or uncompRESSED. Screens and fonts can be saved to BASIC as well as to storage media, and with any extended QL, more than one Eye-Q can be run at a time.

Status information is displayed on an unobtrusive status line at the top or bottom of the screen.

The Editor, now £19.95 (£39.95 for the expanded QL version) is a no-word-processor. It is a text generator which can handle any kind of text file, documents, programs, as well as a range of special characters for handling ASCII and control commands as if they were normal text.

The great advantage of The Editor, apart from its flexibility of application, is speed. The advance we've suffered by using writing for certain wordprocessors (including the vaunted Amstrad PCW, much used in this office) is small through, delete or move blocks of text is not a problem.

The program does not impose its own format on the text, except as the user specifies, and no 'normal' data travels with the output, which is then clean to be handled by another formatting source, such as Desktop Publisher. This can then be generated for final establishment elsewhere, or brought in from other WPs (Apple in particular) for bulk alteration and reformatting.

At the moment, Desktop Publisher will not take photographs or make the coffee, but they're working on it. It certainly will do almost everything you want from a DTP package, and in conjunction with Digital Precision's other programs forms a very impressive system. ■
Price £19.95, with Eye-Q £39.95, with Editor £14.95, with both £39.95. Supplies: Digital Precision, 222 The Avenue, London E4 9SE, 01-827 5455.

Usable as either a stand-alone program or as a background job serving a text editor, the current edition of Q Writer is supplied with ten distinctive font styles and in two configuration versions on one master microfloppy cartridge.

Users of QLs without RAM expansion can configure the main program module so that only one or two selected fonts are held in memory at any one time. Fonts are loaded with the **Font...Load** command. Whenever a new font is loaded using a current font number, the previous font is removed.

Alternatively, users of expanded machines may opt to use the special main program module, with eight of the fonts built in, and may load up to a total of 12 fonts at any one time, each of which is identified with its own selected code.

Switching between fonts is done by using appropriate codes and can include any other printer control codes supported by the Q Writer system. Printer commands are initialised with Q Writer's print simulation mode by adding a line to **QW100** or The Editor's font program: **Font...USE Printer** (or **PR**).

Changes of typeface in SuperBASIC are made by sending short control codes to the printer, initiated by the number 1. Starting a particular typeface, such as Q Writer's Roman font number five would be done by inserting, in SuperBASIC, **PRINT**, **M457**.

All subsequent font changes are made by preceding the font number required with the number "T". Typically, a command from SuperBASIC to change from one font style to four font, a particularly good Old English typeface, is made by inserting **Print#1, chark(2), chark(4)**.

If used with an extension toolkit supporting EPIT, font styles and any of the printer control commands supported by Q Writer may be sent to the printer from SuperBASIC by preceding a block of text in a particular typeface with the command: **EPIT#1, T, font**.

Users of The Editor can produce an equivalent control code insertion in a block of text by inserting characters **<CTRL><SHIFT><C>** (producing The Editor's own character "T", with an over-score), **L, font**, followed by any other Q Writer-selected characters required.

Other commands supported directly

by the Q Writer system include codes for the printer bell (**T7**), tabulation (**T9**, plus two additional numbers indicating tabulation spacing), form feeds (**T11**), select and deselect proportional printing (**T0** and **T8**, respectively).

Q Writer's definition of unproportional spacing is that, when selected, the spacing of each character is equal to the widest character in the font. Selecting another font exceeds the unproportional spacing option selected by a previous font.

Of particular interest is a facility for selecting and deselecting character space out (**T5** and **T6**, respectively) and another facility for selecting either normal width or double width (**T10** and **H**, respectively). The latter facility produces a typeface width increase of 2½ times than that of the normal width.

Q Writer's fonts may be used with any Epson compatible printer either directly from SuperBASIC or from within text management programs such as Poole's Quill or Digital Precision's The Editor.

The only real limitation encountered with Q Writer is that, if two or more jobs are running concurrently in the QL, they will remove all data from the

print queue if needed.

For English copyedit:

expansion mode chapter, with space after
Section break.

remove all text in.

Expanding line font,

Expanding line font, with space after.

MLQ quote, sometimes producing unpredictable results.

An omission from review copy of Q Writer is that it did not include a font editor for users having particular font or special symbol requirements, although Ballmark have promised to provide a character editor for Q Writer within the next three or four weeks.

A well thought-out, easy to get on with program, my only criticism of Q Writer is its rather minimal documentation. Off its bat, Q Writer is not a difficult program to get to grips with, quite the contrary. But, as with so many programs of this type, it is easy to invent useful applications. ■

Supplies: TK Computerware, Stone Street, North Stafford, Ashton, Kent CT13 8EP, 0333 81 3891.
Price £19.95, with Eye-Q £39.95.

COOL LOOK AT CAD

Elonsoft's ICE has become such a standard fitting for serious QL users that not a few of us would have to think twice if the machine booted up first thing in the morning without the decision in the right hand corner. Icon Controlled Environment, for the information of the others, is a WIMP-type icon-driven front-end program which allows you to LOAD, PRINT, COPY, RESUME, etc., your files without having to type-in "load()", and the rest every time. The busy/zealous person's command list, ICE is installed in a plug-in 8000 cartridge, so it boots virtually automatically, and it supports a variety of other icon software such as Choice, which allows free way multi-

EIDERSOFT'S WIMP SYSTEM AND RUBICON'S VIEWPOINT USTI THE QL'S GRAPHICS IN DIVERSE WAYS. DENNIS LEEK ASSESSES THEIR STRENGTHS AND WEAKNESSES

tasking, among other things, and ICE Toolkit, which incorporates ICE features in your own programs, all at a reasonable price.

Last year Electronit consolidated ICE's usefulness by bringing out a mouse controlled version, along with two grades of mice. icon-driven menus are ideal for people with a steady hand and no keyboard skills. Being the opposite, I generally prefer not to use them, but once you are committed to icons or indeed anything which can't be set up for single keystroke commands, a mouse is a godsend.

The ICE mice have the basic ICE system already installed in the interface,

The three dimensional computer aided design for the Sinclair QL" says the subtitle in Viewpoint's smart black and white packaging. Elsewhere in the comprehensive handbook, it reminds you that it makes sense to plot out drawings of any complexity on graph paper first. Apart from the naivete of the final output, CAD packages are only an advantage if they are flexible enough to make real savings in time and trouble. Viewpoint's handbook takes considerable care to orientate the user so that, without contracting any false sense of security, I found that I could start screen drawing without fears.

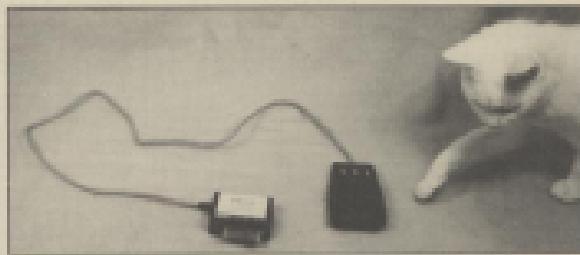
As it was a while since I had used a CAD package, I went for the demo first. Pressing C gave me a blue wire frame cube with the x, y and z-coordinates in yellow and red. I wasted time trying to remember what x, y and z meant, but once I dropped that and did as the instructions told me, I found that it was easy to rotate, zoom in and zoom out around the cube in larger or smaller jumps.

Using ALT with the cursor keys gives much larger increments, but with the alphanumeric keys it stops any further

progress, or that rotating can be done in large jumps, and zooming in slightly more modest steps. I tidy enlarged the cube right off the screen, and then had a tedious job on my hands to bring it back again before I had realised that I could zoom in much faster by using P. All the movements can be repeated by holding the keys down. Reconstruction of a complex drawing after such movement in mode 0 graphics is by no means slow, but it becomes tiresome if you are doing a lot of manipulation, so the screen can be toggled to mode 1, where reworking takes place very quickly.

The second demonstration is a set of spherical polar co-ordinates which can be numbered about to get a clearer picture of what different axes and co-ordinates mean in practice.

Conventional screens can appear either in VIEWPOINT mode or in entry mode, and can be toggled (from entry mode only, although it affects other screens) between mode 4 and mode 8 graphics. Entry mode accepts the instructions which build up the future. For simple three dimensional shapes this is easy; the program provides a number of standard shapes like circles, spheres,



an alternative to buying the mouse and fitting it to a previously owned ICE. There are two versions, the Mouse at around £10 and the "jelly ball race" Supersoft Mouse at around £15. Both our samples worked pretty well, especially considering the adverse conditions on my working surface, which is not usually configured for mice.

Having tested the mice on ICE and Choice, and quickly getting used to moving the cursor around via the desktop, I moved on to try out Electronit's ARTIC freehand graphics package. It was here that I had my first grapple with the handbook which, like many other user documents, is perfectly clear if you know in advance what you are supposed to be

rectangle, box and a polygon with any number of sides between 3 and 10. There is also a mirror image command which speeds up the building of symmetrical forms, but must be treated with caution if you don't want to end up with a mirror image in the wrong plane - and although there is an immediate delete function, I haven't yet succeeded in 'wiping' a mirror image.

Other commands which speed up drawing are Poly, which joins two numbered coordinates with a straight line, and Search, which enables co-ordinates to be accurately 'graffited' and identified in the lower left hand subarea (and also identifies the real whereabouts of the cursor, which by the very nature of the process is quite easy to lose track of).

Other commands display a set of opa lines over the drawing, or alternatively superimpose a calibrated grid on the same plane as the cursor. (Panorama moves the whole drawing along one of the axes, and (0:right) moves the cursor instantly back to the screen centre, which can be an essential move if another manipulation has moved the cursor suddenly off-screen. Write text) allows text to be overwritten on the drawing. The text does not become

doing. The quibble, for instance, that it isn't entirely clear WHICH of the three programs prefixed **BOOT** you are supposed to operate can be answered by saying that only a really weird run can run the wrong file. But a user book should guide even a nutty through a booting sequence without confusion. Throughout the rest of the manual, too many steps are referred to vaguely or out of sequence.

The menu replace manual **KEY**'s double-click/single-click operation with the centre/left hand buttons on the mouse. In **ARTICE**, the left hand button is used only to change the ink colour during drawing.

The QL's processing power means that it can handle complex graphics quickly. The mouse enables quick and accurate (depending on how steady your hand and eye is) freehand cursor movement.

Booting **ARTICE** puts you straight into a black screen with a wiggly-edged white dot for a brush. This is the experimental screen for new users, where you can practice painting broad strokes while swivelling through the ink colours using the right hand mouse button, and turning the ink on and off with the left one.

However, these are the only two choices which can actually be made within the drawing screen. All other changes have to be made through the main menu, which entails much cursor shifting and clicking to and fro, which slows down the whole process. To take a simple example,

part of the drawing, but remains (and prints out) at the screen position where it was released. It can be removed wholesale by **CTRL W**, but not edited.

Colour is displayed by the cursor, and the colour of the next piece of the drawing to be laid down can be selected at any time via function key 1 and a menu. There is no colour fill function, and personally I found the colours more distracting than helpful on complex drawings. They occasionally helped to establish perspective - this is a matter of personal taste.

Colours already laid down in other modes can't be deliberately changed (although switching modes automatically causes the usual changes). Indeed, once it is on the screen, nothing further back than the last command can be altered without re-starting the entire drawing. **Djelate** (deletes) the last operation (this is effectively limited to the standard library shapes and the **dim** function), but **CTRL D** removes the last, and the user's manual firmly reminds the user to Save the drawing regularly.

Solid three-dimensional figures (as opposed to wire outlines) are achieved by hidden line removal using back surface

doing a check on a point variable, the **SET** function has to be resolved from the main menu for every change of ink colour.

Using the crosshair brush, the colour can be changed pixel by pixel. The x7 seven magnifier is helpful here, but it can be done on the full screen if you have patience and good eyesight.

As well as plain ink (the usual eight colours in mode 0) and four in mode 1) the colour effects, airbrush and stipple/stripe can be obtained from the menu. Airbrush simply gives a random stipple in the track of the brush, with a choice of five stipple densities. The **DLK** menu (which does give you visual indications of which ink colour you are changing to - you just have to go through two menus to find it) allows a choice of plain, or any two-colours mixed in regular stipple or one-pixel bars, plus their inversions.

Admittedly this last operation is done via the **Tools** menu, a window which appears on the drawing screen when the main menu is selected by pushing the middle button on the mouse.

ECOL/colr allows changing of all or any of the colours over the whole or part of a screen. Selecting a part of the screen is done via cursor set and pull down windows. This is useful for altering one colour in a small area, such as the colour of a piece of text. Unfortunately, the process is made more cumbersome because an

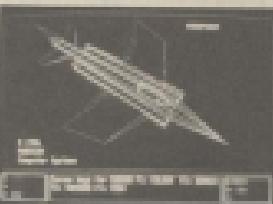
"alternative" colour has to be selected for all eight colours every time **ECOL** is used, even when only one colour is actually going to be changed.

CDPT allows areas of the screen to be freely transferred, duplicated and saved individually as files for future use. This includes an **IGNORE** function so that you can discard one colour, such as an unwanted background, from a block before you move it.

The manual refers several times to the fact that **ARTICE** uses all the available memory on an unexpanded QL, but this fact notwithstanding I would still have liked to see some status information. For instance, ink number and x/y cursor position, on the drawing screen to save a lot of clicking and cursor-leaping about.

Fast graphics, slowed down by the select procedure - but I still found **ARTICE** enjoyable and straightforward to use, even though the manual is like a jigsaw puzzle. (The manual index gives eight entries, all concerning the mouse, in the first three pages, and only two entries for the other twelve pages). And at £14.99 it is good value and an attractive addition to C128 and the BBCZ. There is also the non-mouse version with only minor differences to the mouse one - ideal if you have a talent for drawing curves with the cursor keys! ■

Supplier: Electronsoft, The Office, Hall Farm, North Orleton, Upminster.



elimination, which only works fully for single convex polygons. Creating the vertices and storing the coordinates is a tedious process, but once this is done the hidden line function can be triggered. According to the handbook, a closure is a single convex polygon and a jet aircraft isn't, so the hidden lines work less well for more complex drawings. Hidden lines can be selected, viewed and saved by stages, which assists in reaching the desired effect without fooling up.

Finished drawings can be saved as three-dimensional co-ordinate files, and printed out as they appear on the screen from the **E** menu. A reasonable amount of information is given on printer control codes in the handbook, with examples for

Epson coders. On-screen images can also be saved in a machine code subroutine for use with other SuperBasic programs, and detailed instructions are given for doing this.

Viewpoint is not a professional CAD package. There is no facility for defining your own library shapes for inclusion in other drawings, and the grid calibrations are not accessible to the source micro, borrowed from my electrical drawing department, and serve him right for being a cheapskate, because you don't buy that sort of package for less than several hundred pounds.

Viewpoint is very neat and tidy, the screen resolution is good even on my low-resolution screen, and the handbook has been written with great thoughtfulness and so far as I can see very few and very trivial mistakes.

This original version of **Viewpoint** from November 1988 is loaded into a permanent memory position, but Electronsoft tell me that there is a newer version which will run alongside other programs in the QL's memory. ■

Price: Cambridge £18.95, disc £20.95.
Supplier: Electronsoft, 11
Bassettide Road, Northfield SE 15 2JN.

HELEN ARMSTRONG
REVIEWS THE
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REPLACEMENT
KEYBOARD, AND
CONCLUDES THAT
DIGITAL
PRECISION'S
IBM-TYPE UNIT MAY
WELL BE WORTH
THE MONEY



CHAIRMAN OF THE BOARDS

The QL is a natural for a replacement keyboard - many of its 'fall-trap' keys seem to have a one-way ticket, the resulting black holes remaining as sharp-edged elephant traps for unwary fingers, transforming the would-be touch typist into a frustrated switch typist.

ABC Electronics' Deluxe keyboard, marketed by Digital Precision, is an extension (rather than a replacement) keyboard. The Deluxe started life as an IBM PC-XT device, which means that, with the interface provided by DP, your QL is graced with a professional quality keyboard.

There are ten function keys to the right of the main keypad, which correspond to F1-F5 and SHIFT F1-F5 on the QL, and are also user definable. On the left of the keyboard is a standard numeric keypad complete with centering dip on the 0, and there is - oh joy - a backspace key which deletes the character to the left without using CTRL. The whole unit is about 20mm high, and there is a pair of strong integral fold-down supports at the back of the base for better keyboard tilt, and they won't fall off.

The key feel is fairly light but not loose or spongy, and no bounce. Trying it for speed, I found that the screen input kept up with the fastest typing speed I could manage, and stopped when I stopped. Freddy Vashka of DP was prepared to be a bit less namely ponderous, smashing the keyboard vigorously with the flat of both hands a few times. The input got well ahead of the screen, but the buffer speed

admirably and spent the next 20 seconds or so quietly catching up.

"The Solitor keyboard has a valiant attempt, but it costs thousands just to set up a model for injection moulding, so they have had to opt for vacuum moulding. Why make the thing yourself when you can buy a high quality, industry standard injection moulded keyboard from someone who already has a production line, and concentrate on the interface?"

Installation is not difficult, but it requires a certain amount of care. Having opened the QL, ribbon cables which connect the present QL keyboard must be disconnected and the illegated 8048 must be eased gently out of its military socket and the new chip carrier, an integral part of the interface, carefully located in the socket without shoving and bending any of the legs. Once correctly located and driven firmly home, the 8048 goes back into the new socket, and the interface becomes a permanent part of the computer. The interface board is designed to fit over and around the present components without bending anything aside, and with or without the aluminium plate under the keyboard in place.

The interface goes through any available port or a purpose-cut slot in the case - the 8048 port is recommended, as there is a plastic pillar just inside round which the cable can be made fast before fixing the connector in place.

The new lead connects via a 1 pin DIN socket to the corresponding plug on the end of a ribbon lead to the keyboard.

Apart from the aforementioned keys, there are one or two which do nothing (a by-product of their IBM-style provenance). The Sys Req key looks out the keyboard input. A full system reset can't be done from the extension keyboard, as the RESET button on the QL acts directly on the internal hardware. All the QL's characters are supported. Caps lock and Number lock (for the keypad) both have LED ON indications.

The draft of the user documentation which we saw is well up to normal DP standards of extensive detail, including instructions for ridding yourself of static before opening the QL, and advice about what to do if an excess of peripherals causes overheating in the QL, including an offer to replace the voltage regulator as a last resort. This is sound practice for anyone with a QL or a Spectrum, incidentally, and in the QL it doesn't even require soldering.

DP stresses the Deluxe's full compatibility with QDOS and with all manner of disk drives, memory expansions, printer interfaces, mice, etc. With the keyboard which is available in black, as well as the usual beige/grey, they are also giving away a Giga Basic cartridge.

Despite bags Systems' plans to launch cheaper QL replacement keyboards, it may well be that if you want the best the Deluxe keyboard may be the one for you. ■

Price: £399.95

Supplier: Digital Precision, 212 The Avenue, London E1 4EP, (01) 537 5455.

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Spectrum Rom Calls

Russell Thomas

Many of the System Variables are detailed along with 2 editing command.

23656 FLAG02	POKZ 23656, 8-CAPS LOCK ON D-Off
23659 P 02	Size of the lower part of the screen.
23660 S TOP	The No. of the line which will appear at the top of the screen in autorun.
23670 SHEAD	The starting point for ROM. Its value is set by the ROMDOS\$ command.
23672 FRAMES	Three byte hex-counter that counts the number of frames sent to the TV since power up. To POK#X a three byte number use the following: POK#X A+0002#P#E#X+(1+2#P#D#X)+#I# where X is the starting address.
23679 P POSH	Redundant (?) column number of printer position. Kempston use this location to set the printing mode (2#D) for their Commodore 6 interface. That's right, it's empty, use it for anything you like.
23681 YOUNG\$	Scroll-counter. If you want to stop "scroll" being printed, use POK#23681, 2#0 in your main loop.
23692 SCR CT	Another empty one, although only due to a nice little bug in the ROM. Not really a \$V although POK#9#G is with \$B# prior to saving a program stops the start tape message and instantly saves the program. (Never for saving blocks and blocks of data.)
Worth a mention... VADS=ADDS=PROGRAM LENGTH	

Some of these commands allow you to abort editing to file. The manual is incorrect when it says you will not be allowed to leave an incorrect line. For instance, if you have

just deleted half of a perfectly good line, if you use EX#H and then return, your original line will still be there! This can work the other way around of course. If you have just

Editing commands

New command parity for 128 owners. These extra editing commands available with the keypad can be found on the keyboard. I've compiled a list but if you know of others then let us all know.

6#K-SCREEN MODE	09=ONLINE 0#FF#7, C#
6#R P	move to top of last page
6#R W	move to top of first page
6#R E	move to end of current line
6#R F	move to start of current line
6#R Z	search screen forward
6#R I	move down half page
6#R M	move to end of current line
6#R N	deletes to end of current word
6#R C	deletes previous word
6#R R	deletes from cursor to start of line
6#R T	move to top of last page
6#R J	move to previous word
6#R K	deletes from cursor to end of line
6#R H	move to top of first page
6#R P	move up half a page
6#R S	move to start of line
6#R G	switch screens
6#R D	move to start of next word
6#R B	deletes clear under cursor

Expanded Characters

Robin Davies

When displaying text on the Commodore 64 you are stuck with a standard 160 character set. The

following routine will allow you to print text at double width, making each letter 8x16 pixels wide. The program is written entirely in BASIC so adding it to programs of your own should prove to be easy.

PROGRAMMING: C64

```

1# REM EXPANDED CHARACTERS
2# REM POKE$3272,21 : NORML CHARACTERS
3# REM POKE$3272,29 : EXP CHARACTERS
4# REM
5# R=53248 : REM HIGH PINE LOCATION
6# S=1924 : REM TOP SCREEN LOCATION
7# C=574795 : REM TOP COLOUR LOCATION
8# POK#H#32, @ : REM BORDER BLACK
9# POK#H#30, @ : REM SCREEN BLACK
10# PRINT#3@ : REM CLEAR SCREEN
11# POK#H#4, 29 : REM EXPANDED ON
12# REM
13# REM NUMBERS BELOW ARE CODE NUMBERS
14# REM FOR THE LETTERS: C=65, 24=67, ETC...
15# REM
16# DATA 65,24,16,81,14,85,84,32,83,85
17# DATA 81,16,81,83,85,16,17,82,84
18# DATA 85,13,15,86,85,15,16,85,82,82
19# DATA 16,46,83,46,23,46,32,82,25,32

```

```

20# DATA 16,15,82,89,14,32,84,81,22,89
21# DATA 89,17,32,85,15,16,82,85,15,21
22# REM
23# E=62 : P#(2#44
24# FOR#I=STO#1 TO LINES : REM LINES TO PRINT
25# FOR#J=STO#2 TO # : REM NUMBER OF LETTERS
26# POK#I,59 : POK#H#44,I
27# FOR#M=1 TO # : POK#H#44,M
28# POK#I, POK#H#33,I : POK#L,59
29# POK#H#70,I : POK#H#44,I : POK#L,59
30# POK#H#70,I : POK#H#44,I : POK#L,59
31# POK#H#70,I : POK#H#44,I : POK#L,59
32# POK#H#70,I : POK#H#44,I : POK#L,59
33# POK#H#70,I : POK#H#44,I : POK#L,59
34# POK#H#70,I : POK#H#44,I : POK#L,59
35# POK#H#70,I : POK#H#44,I : POK#L,59
36# POK#H#70,I : POK#H#44,I : POK#L,59
37# POK#H#70,I : POK#H#44,I : POK#L,59
38# POK#H#70,I : POK#H#44,I : POK#L,59
39# POK#H#70,I : POK#H#44,I : POK#L,59
40# POK#H#70,I : POK#H#44,I : POK#L,59
41# POK#H#70,I : POK#H#44,I : POK#L,59
42# S#=128 : H#=C-128 : REM TD
43# POK#H#70,I : REM EXPANDED OFF
44# POK#H#27,I,21 : REM EXPANDED ON

```

Icon Toolkit

Smart Growth

The final involvement in the logo 'Task' designs involves our logo designer.

This program allows the user to design 5 layers at a time. These groups of maps can then be merged together to form

a larger line-numbered input up to 250 lines. On leaving the program a $\langle 10 \rangle = 10$ line is displayed along with a menu. The cursor is moved using the cursor keys. Pressing the space bar fills a block with the current pattern. Selecting the 'N' key turns spaces needed on or off in each move; pressing SPACE when the current block is other than zero allows the user to change the plan or index entries. Line devices can also be inserted.

an unoccupied. Finally, they can determine if specific areas have increased or decreased in usage over time.

To one more than 1 and of 2 layers in a
successive layer.

II numero indirizzo. II

I need help [checkmark]

1990-91 (380)

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The author's research was funded by

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PROGRAMMING: AMSTRAD CPC

We want your programs!!

Yes, this is your chance to get rich and famous. Well, famous anyway, as Popular Computing Weekly is looking for contributions to the Programming Pages.

What sort of thing are we looking for? You name it - anything original from games to utilities, applications and the like, written in Pascal, Macintosh code or anything else you can think of.

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available, and local PC and Macintosh

Spectrum, Anatolii, OB., Correspondence, etc.).
to what those findings. What we need is a
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age and E10 for each Bytes & Pieces contribution we publish. Plus the fact that our name will be indelibly carved in the popular Programming Hall of Fame till time immemorial. What more could any fan want?

Just send your masterpiece in to Julian Evans, Technical Editor, Popular Computing Weekly, 12-13 Little Moreton St, London NW1 2PP and he'll consider your entry.

Magic Maze

Black Mountain

Only users will need to set Page to 8-1008 before typing in the longer strings and, indeed, running the program. Next week

If you can't bear the wait then send £10
to me at 18 Kingsland, Leyton,
London E18 2RQ.

**Fail
Safe**

Kennedy

This interrupt driven OpenVMS routine provides a secondary break facility for those machine code programmers

that find their code trapped in an endless loop. Turn it on with **ABANDONED** and **ABORT**, and off with **RELOADABLE** and **RESET**.

To better help you program power differences
between and among countries to return to focus.

```

18 REM POKE "PAUL-SAFE" CODE INTO MEMORY
20 CLEAR 649999
30 FOR N=650000 TO 650000+69
40 READ X: POKE N,X: NEXT N
50 DATA 62, 253, 237, 71, 237, 79, 261, 0, 0, 0, 0, 62, 63, 237,
    71, 237, 64, 261, 0, 0, 0, 0, 0, 254, 0, 0, 0, 0,
    0, 229, 253, 197, 245, 255, 243, 62, 127, 219, 254,
    238, 3, 48, 7, 261, 193, 269, 225, 251, 237, 77, 241,
    193, 269, 225, 251, 1, 0, 129, 11, 128, 177, 32, 251,
    17, 196, 28, 179, 153, 10
40 REM SAVE THE 78 BYTES OF CODE FROM ADDRESS 650000 OWNED
70 REM RELOAD WITH "CLEAR 649999: LOAD "name":CODE 650000
80 REM INTERRUPT ON = RANDOMIZE USR 650000
90 REM INTERRUPT OFF = RANDOMIZE USR 650010
100 REM TO CALL THE ROUTINE PRESS SYMBOL SHIFT+BRK/C

```

Sound Sampler

Beth Luttm

The Spectrum program lets you move around the up to four seconds. Sampling speed is reasonably flexible.

gible but could be greatly improved by the use of an electron gun.

From A to record the sample and P to give a blank reading.

```

10 REM POKE "SAHPLER" CODE INTO MEMORY
20 CLEAR 640000
30 FOR N=650000 TO 650000+67
40 READ #1 POKE N,11: NEXT N
50 DATA 33, 232, 128, 14, 233, 243, 6, 0, 219, 234, 7, 7, 203,
19, 14, 240, 6, 0, 0, 114, 35, 124, 105, 104, 235,
253, 231, 201, 0, 33, 232, 120, 14, 233, 50, 72, 72,
15, 15, 230, 7, 70, 243, 124, 15, 15, 15, 87, 6, 0,
123, 177, 211, 234, 203, 10, 14, 240, 35, 124, 105,
194, 21, 254, 251, 201
60 POKE 250000,01 CLS
70 PRINT FLASH 1:AT 11,6;"PRESS":FLASH 0;"R TO RECORD"
80 PRINT AT 13,12;"P TO PLAY BACK"
90 IF INKEY$="R" THEN PRINT FLASH 1:AT 11,12;"R": RANDOMIZE USR
650000: GO TO 70
100 IF INKEY$="P" THEN GO TO 90
110 PRINT FLASH 1:AT 13,12;"P": RANDOMIZE USR 650000: GO TO 70

```

Selective Copy

Action Street

This routine for the Spectrum and any ZX Printer compatible simulates the COPY-command, except that it allows you to copy any part of the screen.

When reading the routine use CLEAR at 125 first. To use the routine enter PGMD at 125, top line, PGMD at 125, number of lines and then PGMD at 125 to perform the copy.

COMPUNET TO MOVE TO NEW MAINFRAME

Compunet is always changing and adding new areas of interest to subscribers. Now, as Graham Edkins reports, they are preparing for their biggest change yet.

Compunet could never be accused of being a static network, and from the very beginning it has been adding new ideas. The fact that the access software can be changed so easily by a simple automatic download of the latest code makes any innovations that much easier to implement.

Compunet is now working on its biggest change yet, moving to a new mainframe, which means that the latest news will have to wait for that fact. However, the new mainframe is still on schedule (unusual in the computer world) for its summer launch.

As the users can create their own directories and make their own news posts, the work on the new mainframe has not affected the growth of information, special interest groups (SIGs) or programs available, in fact Compunet seems to have grown every time that you logon, so it is easy to get used to one particular area or even a few areas and miss the changes going on in others.

Routes to others are given at the bottom of each directory to encourage you to "jump" to a different, maybe un-related part of the network, with the touch of a function key. Alpha gates similar to those which Prestel has just introduced, also make it easy to move around from one area to another and avoid the long drag through directory after directory.

Even with such ease of movement it's very tempting to settle down into a set pattern so I decided to take a good look around and see what's happening. In my last report on Compunet I'll tell you what I found in the Demos area, where I'll concentrate on the ones that you may not be aware of. This time however we'll look at some of the areas on the rest of systems, many of which are new to me, although many are old friends which deserve another look.

I would guess that most people start their online session by fitting GOTO in the diskload and typing RHD95. This is where the editor of Compunet writes about the latest news pages to see. Many of these have been given quite a bit of thought.

person that uploaded them and as the news itself only remains for a couple of weeks at the most and there is normally an updated news two or three times every week.

others are very prolific in Shockwave (GOTO SHOCK), further entertainment with a reference below edge to a lot of it is in COSMOS where you will find well developed areas like High Holes, Astronomy and Dr Who (GOTO HHS, AS TRD & WHO).

Over in the Labyrinths Dir there is everything to do with role playing games, the multi-user game MUD of course and VALLEY which is a small section of MUD which can be used on weekend evenings for just 50p per hour but you will also find things like the Play by telnet directory (GOTO PBTEL) and the armory where Zergor gives instructions for making a mace, a sword or an axe! As the word labyrinth is no longer for a keyword they have given it the code GARDEN.

There are many places to look on the system apart from PBTEL to find the latest uploads, try GOTO 05 which is a list of page adserts or the Chat-on-line area (GOTO CHAT) where many Compunetters promote their uploads. It also gives you a good starting point for any voyage around the network and also lists many of the Alpha Gates.

If all of this travelling around what has now become a very large database, causing that in it's constantly dedicated to my computer, has proved too much for you, then I recommend settling down to a good and thought provoking read in the Arena area (GOTO ARENA) where other nations have so far given their views on such controversial topics as religion, the channel tunnel, women in computing, AIDS education and South Africa. You may well find yourself duly bound to express your own opinions by venturing into its discussions!

I hope that there has been something mentioned on this page that will in the future add to your own list of calling places. If you don't want until the next Compunet article to tell you about the Demos, for which Compunet has become so well known, then I'll direct you to Demo Review on Page 202/203 and PCTV Demo World on Page 202/204.



It is very difficult for the editor to see every news upload so if you feel that your latest masterpiece deserves a mention then drop a line to her on the ED FEEDBACK. If you like your news to be about myself, hardware, software and computer gadgets then the place to look is the large card grouping directory from JAUJ. It goes by the unusual title of The Electric Frog Plate, but GOTO FROG will take you straight there.

Aerospace Radio enthusiasts have their needs catered for in the RACD area, this is a Closed User Group but a small one off payment allows you entry to this area started by JAPYH. Aviation news can be found in AVIA80 and other news alpha gates like MAPPO and CLOUD9 are also available. You'll probably find an area covering just about every nationality, or for that matter integers, indeed that you could think about if you don't think you can already start one!

If you prefer to be entertained instead of educated then there are a couple of other news gates to try, MCAR will lead in the direction of Transair from PB80 while JET12 and

2-Bit drumkit for the ST

2-Bit Systems released a drum package for Atari 8-bit micros some time ago. Now it has revised that package to work with the ST. Mark Jenkins looks it over.

At the recent show we looked at 2-Bit Systems' drum package for the Atari 8-bit micros. Now the company has modified the package to work with the ST, and has taken the opportunity to launch several options for different musical applications.

2-Bit has also thrown in its lot with Digidrum, which will be distributing the ST Digidrum both here and in the States. No doubt they will give the company much wider exposure, which is bound to be a good thing.

The subtly-coloured Digidrum box (the bright purple actually, you can't miss it) contains just one disc and a handbook, and the optional Sample Disc 1 has a hybrid listing the sounds contained therein. There are 41 sounds included, which for the sake of completeness we'll list below:

1 Bassdrum	15 Crash	29 Crash 2
2 Cello	16 Edition	30 Snare 1
3 Chorus	17 Elephant	31 Snare 2
4 Clever	18 Edition	32 Snare 3
5 Cuckoo	19 Edition	33 Snare 4
6 Computer	20 Edition	34 Software
7 Cork	21 Gongong	35 Stick
8 Corks	22 Harmonica	36 Tambour
9 Drums	23 Indian	37 Timpani
10 Drugop	24 Loonings	38 Trumpet
11 Ebassa	25 Magician	39 Tuba
12 Edossa	26 Marimba	40 Whistle
13 Edossa	27 Monchee	41 Glass
14 Ekyombo	28 Oct.	42 Oct.

You can arrange these sounds into two complete kits - for instance, using all the E-prefix'd sounds to create a 20mm-dia. electronic kit, or using the tank, bush, congas, slate and so on to create a Latin kit.

A total of 96 sounds can be loaded and switch between sounds on the main disc to start you off. Independently, you can run the program on a 1024x1024x16bit colour or monochrome monitor or TV (in the case of the 800x600x16PM).

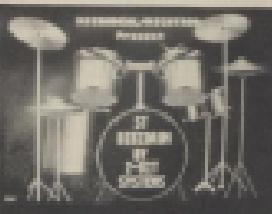
The instructions handbook is a little on the乾燥 side (in fact it's just four sides long) and is a bit impressive in some areas. For instance, it's not strictly true that Digidrum will "turn your Atari 101 into a high quality sampling drum machine".

You can do采样 yourself - you need the optional Rapley sampling system, which has been used to create the sounds supplied, sampling at around 2048Hz.

The default kit on the main disc consists

of bass, snare, open and closed hi-hat, cowbell, low and high tom, low and high conga and crash. 90 patterns can be stored and these can have between 4 and 32 beats; patterns can be entered in step time or real time and linked together to produce a song of up to 70 patterns.

To increase the possible length of a song, you can also repeat a single pattern within the song or loop a whole sequence, and of course everything can be mixed in also.



If you do have the ST Rapley cartridge you can connect its phono out socket to your ST - although you're limited to listening to samples via your monitor. If you auto-aut "Drum PRO" you'll hear a demo song and you can use the alternate key to select another of 16th (yes) the Rapley cartridge sound output.

The package doesn't use much of the disk environment and it keys out without a pause. The cursor arrow keys are used to move along the top-of-the-screen options, which are speed, tempo, edit song, play song, edit pattern, load, save and exit, the last of these simply repeating some of the specification from the handbook.

Some of the terminology in the other options is very poorly chosen. When I'm choosing to set "speed" it's actually setting rate, which can be set to 2000Hz (the highest quality) or 1000Hz for the longest time. All samples are described as being "16kHz in length" - perhaps this refers to 16kbytes?

When we do get on to what you and I might call speed - or tempo, if you like - we find that 2-Bit has made it variable from one to 40. But is 40 faster or slower than one? Well, logically enough it's slower - the logic being that the tempo setting indicates the number of 60Hz counts taken between beats.

Editing is a slightly more sensible option, calling up a long list of 70 patterns together with the number of times they should be repeated and a suitable tempo. Figures are entered using the numeric keys and you have to go along a whole line, once you've specified it using the cursor keys - in other words, you have to enter the pattern number again even if you only want to change the number of times it repeats.

You can wipe a complete song using the edit song menu and have the same option on the pattern menu. Patterns are entered on a grid offsetting any till sounds matched against up to 16 beats. The Digidrum package can sound four voices simultaneously and these must have samples assigned to them as voice one and voice two - if you attempt to play the same channel twice then the first only will be deleted.

Granted, the demo dc shows that you can come up with quite complex patterns using just four voices. If you prefer to enter beats in real time, just go to the real time option and you can enter beats by tapping F1 (or whatever sound is currently assigned to voice one) and F2 (or voice two).

You can load and save a voice, a kit of voices, a pattern or a song, as the method of arranging sounds to songs is quite flexible. There are a few disk drive pages, mostly dedicated to announcing the fact that your disk is full, 16 samples taking 2004 of free space.

During playback the package sounds pretty good, and you can create long and complex songs quite quickly with reasonably bright, crisp sounds. However, I'd be very surprised if there were any musicians on the 2.6m market - the tempo assignment, method of pattern entry into songs, lack of patch control for the keyboard sounds, neglect of the issues and inconsistency of the handbook are all regrettably unprofessional.

Digidrum costs £19.95 and Sample Disc 1 costs £14.95. More information from Monogram at the address below.

Monogram Ltd, PO Box 68, St Asaph, Conwy LL15 4XG, 0126 660200.

If you have any queries or tips for this column, please write to Mark Jenkins at Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP. Mark would also welcome examples of your own music in audio or program tape, or disk.

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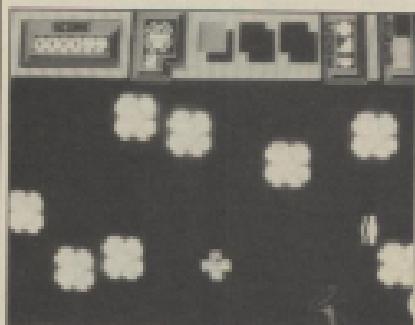
NEW RELEASES

Amstrad CPC

Program Five Star Games Type Computer Price £2.95 Supplier Electronic 204, Red Street, Bognor, Sussex BN12 2AD.

Dante, Cauchon II and Alien Highway star with Democracy Blues and Prototype as bonus.

Surely, you might wonder, is Electron Dreams' answer to US Geric's Gauntlet, programmed by Paul-Jam?



It's interesting how taking a sideways look at a particular game format and just changing one single aspect it can make such a difference to the gameplay.

Jordan Jorgens has taken the simple arcade adventure/maze games - and played around with the gravity and motion aspects of the movement with Kruada. As your hydro-crill moves from screen to screen (there are 42 'levels' in total), instead of the constant downward pull of gravity that dominates in most games, gravity and friction vary in each stage.

In other cases, for instance, there are two centres of gravity - one placed on the left of the screen, and on the right - which makes manoeuvring kind of difficult. In others, intense atmospheric friction means that moving is like running your way through treacle.

In your mission to sort out this abnormal state of affairs by collecting the three letters that spell out the 'word of peace' (the mind boggling) and then delivering them into the hands of the good Alkemist - wherever it may be - why not put things in perspective.

As in most games of this type, things may be picked up and used to aid you - like a chemical spray that will blast away all the nasties, a deflector shield that will send them off and leave at the 12-centred structures that will inflict the weird effects of the strange gravity.

You've got three lives - and as soon as your power gauge goes down to zero, that's one life gone. Some static objects will kill at the slightest contact though - as a stern touch with the joystick is essential.

Released on the full price Pinball label, written by lone West German programmer Jordan Jorgens (listed only by a £4.95 Spectrum, would you believe), but on Spectrum, Amstrad CPC and Commodore 64.

Alkemist is not a classic - but if you like this sort of arcade puzzle solving, it's often enough that it's worth buying.

John Cook

Played in a maze of dungeons filled with enemies, monster generators, food rooms, keys, the game had distinctive, more graphical - rather gothic in nature. If anything, One or something else has played it, it was considered a good quality game.

Alien Highway is a variation of the original Highway Preceptor from Video. It played on roughly the same themes and had some of the same style of graphics, but was a worthy follow-up, requiring sharp arcade skills and a keen eye. It succeeded

Cauchon II is another follow-up, but with very different from Pinball's approach in that you play the part of a bounding pumkin, not to rappel up very much with you controlled in Cauchon I. The switch's position (where the action takes place) is key, full of hazards, trap, not to all that.

Prototype is a game released when Micro-Gear was going through its quality crisis, so don't get too excited - it's a shame because it is the first ever space adventure to feature in the sharing code of Micro-Gear, at least, it's better than a Starry.

Democracy Blues from French company like Microgear, this is a weird arcade adventure that sees you breaking out from prison and escaping round the universe. It's quirky, visually attractive and very French.

Atmosphere is the third game released since Electron video - obviously considering that none of the games are over a year of age.

Program民主型冒险
Edition Price £2.95 (plus £0.50 postage)
Supplier Unit 8 Mylo Software,
Moorhouse Crossroads, Old Cemetery,
Ireland.

Homeworld continues, atmospheric for the CPC with a Light Cycle game on the fly-screws.

Program 科幻型冒险
Price £2.95 Supplier Gamezone
Graphics, Apple House, 10 Castle Street, Sheffield S1 4EJ.

Units 3/3, Holland Way, Halesowen, Birmingham B6 5AB.



Very disappointing conversion to the ST. The colours are drab and dull, and control is like joystick only - although a free star jet should have used mouse control with separate mouse buttons for banks and fire.

Program 飞行型冒险
Price £1.99 Supplier Typhoon
Address Industrial Estate, Maypole
Unit 10, Tyne & Wear NE21 4TE.

Atmosphere and Lockdown on the ST, but it's a lovely implementation with superb sound qualities of course so you move your lockdown character both screen to screen. Completely charming - and it's not costing an arm and a leg.

Atari XI/XE

Program 世界の魔界型冒险
Adventure Price £10.00 Supplier
US Gold, Units 220, Holland
Way, Halesowen, Birmingham B6 5AB.

Atari XI/XE, also based on pinball adventure from 200, which includes a harrowing combat section so the party can really get to grips with the monsters.

BBC B

Program 宇宙船アドベンチャー
Adventure Price £9.99 (plus £1.50 postage)
Supplier Ocean Software, 8 Central Street, Manchester M2 5AS.

You may remember style game with you against the computer.

Commodore 64

Program 亂世の魔王型冒险
Adventure Price £10.00 Supplier Game
Graphics, Apple House, 10 Castle Street, Sheffield.

continued on page 114

Atari ST

Program 亂世の魔王型冒险
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10-HUT!

Activation has timed the release of Gamestar's GFL Championship Football perfectly. Perfectly wrong that is. With the Superbowl a fading memory and the new American Football season many months away, interest is not running high at the moment. Hopefully this will not cause against Gamestar's product as it explores a style of graphics not seen before in a game of this type.

I speak of a three dimension view, both down on the pitch. Here you get to play the wide receiver and the running back. You can in the special team (going for goal) and even punt out.

Before you get into the action, you must go through the performance of selecting the number of players, which teams to use from 26, all related differently, and how long each quarter should last (four or seven minutes).

That dispensed with, it's down to pitch and the kickoff. After struggling to return the ball you are presented with a fairly long list of options for your first offensive play. The choice of running plays includes trap, draw, blast, power, sweep and punt, left or right. Trap and draw can usually be relied upon for small gains while the sweep and pitch options are riskier but can reap greater rewards.

After selecting your choice the opposition makes them and you get to play it out. The quarterback grants the calls unerringly, real sampled grunting as well, and passes the baton to you. This is the moment of truth because you have to know exactly where to run to break through the mess of the scrimmage. If you are lost a



Having broken free, you can stamp down the field – sticking out an arm, if you time it right, to fend off the desperate tackles. Should you manage to plough your way through the defense, then the end zone looms up and the crowd starts cheering!!

couple of arrows at the bottom of the screen guide you in the right direction but by then it's too late to make a big gain. Hitting Dkaren, keep you can stamp down the field sticking out an arm, if you time it right, to fend off the desperate tackles. Should you manage to plough your way through the defense

then life-end zone looms up and the crowd starts cheering.

The alternative to the effort of a running play is of course to throw the ball. There are a total of 22 options (11 left, 11 right) to choose from. More often than not passes come far down field.

The mode of operation here is to wait for the quarterback to

break grunting and then execute a precise number of steps in set directions. A long out arm, for example, requires six steps forward, five to the left and one back. It has to be done exactly right and at the right time otherwise when the quarterback throws the ball you won't be there to meet it. Oh, that it never that simple. You also have the defenses to contend with.

Within the graphics are decidedly chunky they are presented in a clear 3D format, and the animation is quite reasonable. The sound, though, is pretty good, with the pumped pounds of the quarterback and commentator adding to the atmosphere.

With a choice of teams to play against, on a friend, Championship Football could keep you playing until the season really does start in September.

Hints box

- Until you know the pass plays off by heart, try running the ball most of the time.
- The shorter passes are easier to use, so don't try a flag or pool until you really need it.
- Try to outthink your opponent by working out what your opponents moves are and what their response would be. Then try something different that takes advantage of their response.
- Concentrate on timing your runs in pass plays so that you start moving after the quarterback calls the play but before the direction arrows appear.
- Each team in Championship Football has weak points. Try using plays designed to exploit these weaknesses most of the time.

Brian Davies

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ST Update

ST Update is the official journal of the ST community.

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46 Continued from page 46

Impressive graphics in this multi-level basic which has you taking various tools in order to increase a Room and Anatomy. Three sections are Pianos, Bananas and a pig and Karts. Looks good.



Program *Semtex Type-Arcade*
Manufacturer: British Leisure Games
Supplier Player's, 100 Victoria House, Cinema Park, Aldershot, Hampshire GU1 1QH.

Decoder-style software from Player's - just another base for two games. The top on the Commodore disc is *Death and Fungus* - superb - state-of-the-art. But you might like to give it a try.

Program *Death and Fungus Type-Arcade* (C64) £19.95 (Apex) £14.95 (Player's) £17.95 (select) **Supplier** Doctor Box, 201 London Road, Hull HU6 9JL, East Preston, West Sussex BN1 2TR.

Something that lets you link two Commodores together - giving two players with independent discs of the action.

Program *Centaur Healer Type-Arcade* (Amiga) £19.95 (Apex) £14.95 (Player's) £17.95 (select) **Supplier** US Gold, Unit 203, 200 Hatfield Way, Hertford, Herts SG1 2AB.



200 expert level takes the Amiga or 3D-type concept to the limit.

Program *First Year Driving Test*
Software Application Price £19.95 (Apex) £16.95 (select) **Supplier** Autogames Software, PO Box 90, 34-36 Chinn Street, Headington, Oxford.

Learning program based on the book "Are you ready for your Driving Test?" by Mike Nuttallson - designed to the test setting, "then practise and your engine and turn off the lights."

Program *King of Zilla Type-Pool Playing Arcade Adventure* Price £19.95 (select only) **Supplier** US Gold, Units 203, Hatfield Way, Hertford, Herts SG1 2AB.

Image-based game - very fast if too much action depth is lost due to the lack of the graphics.

Program *Short of Spring Type-Pool Playing Arcade Adventure* Price £19.95 (select only) **Supplier** US Gold, Units 203, Hatfield Way, Hertford, Herts SG1 2AB.

Party-based, with playing with tactical info, all based on a tactical board.

As this newly arrived C64 soft isn't bad, but I was generally agreed that *The Bard's Tale* (Electronic Arts) is still the best RPG system on the 64.

Program *Free Computer Arts Type-Competition Price* £19.95 (Apex) £14.95 (select) **Supplier** Doctor Box, 201 London Road, Hull HU6 9JL.

Hannigan - I didn't know Hannigan was a hit.

Program *Super Drifter Type-Arcade* Price £19.95 (Apex) £14.95 (select) **Supplier** Phoenix, 4 Lorne Close, London WC2R 0EP.



The generic information reaches the Commodore 64 at last.

Program *Maze Brothers Type-Arcade* Price £19.95 (Apex) £14.95 (select) **Supplier** Green Sheep, 6 Central Street, Manchester M1 3BD.

Co-op conversion of a terminalo

game of 1986 vintage, it includes platforms, and tanks. You should get the better than look them Gunge and Fighter Flyz also make an appearance.

Or if you're the sort of thing

PC and Companys

Program *The Fourth Protocol Price*



They said it couldn't be done - but we did it," So said and Richard Karp of Software Creations, one of the up and coming newer software outfitts, with the broadcast of *Star Trek II: The Wrath of Khan*. Richard is a happy man, and playing Star Trek on the Spectrum, you can see why.

The thing has been done by Software Creations as well and it possibly could have been on their former and has given thousands of Spectrum owners the chance to experience what the computer press in general have been raving about since last autumn, when the 64 version was released.

In case you missed any one of the several rave reviews in *Popular Sci-Fi*, *Sci-Fi* is an abstract game of control set in a Marble Madness style environment - but instead of looking on from outside the landscape, you are dramatically placed right inside it. Your opponent is a figure placed on a platform high above the stark surroundings - the sentinel.

The game is all about energy. Your ultimate task is each level (and there are 10,000, yes, not thousand) is to destroy the sentinel by absorbing its energy. To do this, you must find a way to get higher than it. To do that, you have to create stacks of boulders (costing you two energy points each), then create a new road "lacing" and transfer yourself into it.

You absorb your odd self (gaining three), and look for trees to absorb (just one) to replenish your energy supplies to move your bid to move. All the time this going on, the sentinel is slowly rotating like a steady lighthouse, draining energy from you if you should fall within its gaze. Get the idea?

With a single sentinel, it's a stimulating exercise in three dimensional visualisation, when there are six - it's blind panic.

Of the four existing versions, Amstrad CPC is probably the best, but the more display on the Spectrum (and you can change that colour at will) is pleasing enough and well drawn.

In all, it's a great little implementation of Geoff Craven's original - highly recommended for anyone that's finding the jumpy-jumpy, shooty-shooty a little bit tedious.

John Cook

Strategy Price £19.95 **Supplier** PGSoftware, 28 Long Lane, Covent Garden, London WC2E 9AR.

Conversion of the innovative space war strategy from C64 to the Spectrum has been

done by the part of John Pepper from M2, with the task of hacking away a group of Russian agents

continued on page 61 ■

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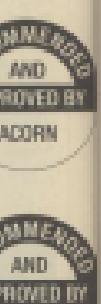
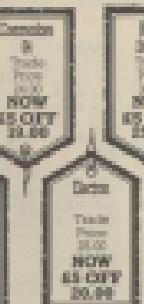
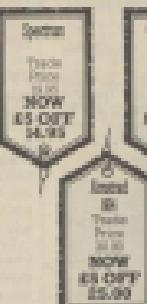
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NEW RELEASES

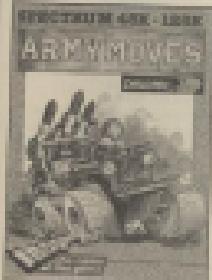
* continued from page 24

who plan to download a modulator circuit in standard format.

I sent it to a friend - and was bombarded with phone calls for the next week. Glastonbury 11 is addictive.

Spectrum

Program Name: Type 4000
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.



Program Name: Type 4000
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.

3D perspective screens advantage - did I tell you under test card?

Program Name: Your Driving Test
Type: Application
Release Date: £1.99. Supplier: Anticsoft Software, PO Box 90, 10-30 Chancery Street, Reading, RG1.

See Commodore 64 listing for comments.

Program Name: Type 4000
Type: Strategy
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.



Card Acrobatics: like, if you haven't already got it, you immediately get a very clever variant of Card 4, and will scratch the high without scratching the pocket. See

Program Name: Type 4000. **Strategy**
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.

Two cards from the American Card Net - Goliath and Clever Clever. Like the recently developed Circus Computer system and further required. What more do you want from a magazine?

Program Name: Type 4000
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.

Vector graphics shooter with a considerable number of hits. The Red Scorpion is the code name for your Mountain Infantry Combat Capsule - and as a Team One Commander you have to take out the air planes, collect the grenades and bay fast food.

Looks OK - but don't expect anything.

Program Name: Type 4000
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.



See Commodore 64 listing for comments.

Program Name: Type 4000
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.

Eight sports to compete in around the world, with lots of local colour. Weightlifting in Russia, Sumo Wrestling in Japan, GM Ding in Mexico, etc.



Hop and Coulson at their very shiny best.

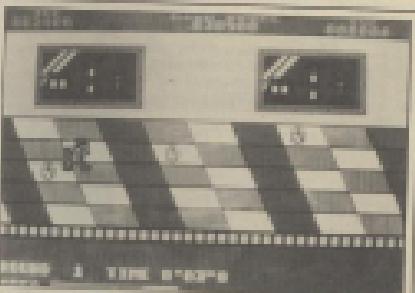
Coulture was always a particular favourite of mine, written by Trevor Turner - with a little assistance from his partner in crime, and a disgruntled Andrew Raybould. In fact, Coulture is a 240 version of Pintoset, a impressive combination of arcade and strategy. Coulture?

Program Name: Computer Mon Type
Release Date: £1.99. Supplier: Megastore Software, 8 Central Street, Warrington WA1 2BD.

An interesting one on this one - Clive Coulson, Marlowe, ST2400. Starts off and it's quite fun.

Includes Coulson, Alan Light

Two Twenty shorts will return next week



COMMANDO C.I.A.
A TEAM ONE GAME

Metrocraze is one of the recent Amstrad conversions of which I have not had the pleasure of playing the Amiga original. This, at least, has the advantage that the game can be criticised in its own right rather than in terms of how well it has been converted. On those grounds, the ST 8120/90, though, the ST version is pacy.

Rather like Donkey or Trivialiser, Metrocraze is set in a surreal landscape of chess-based squares and hellishitory houses, and your task is to speed through the landscape without being dislodged. In this case the screen scrolls horizontally, your player is a little robot skater, and there are twenty-four levels to complete.

Racing against a timer, you have to avoid hazards including pits, rolling boulders of Coke cans, giant snails, rotating cubes, rats which burrow themselves in your shoulders and have to be shaken off, green squares which slow down your progress, and exploding mantraps. To aid you there are accelerators which can increase your speed, trampolines which allow you to leap long distances if your timing with the fire button is correct and cars which can be kicked or jumped on to gain points or slow the timer.

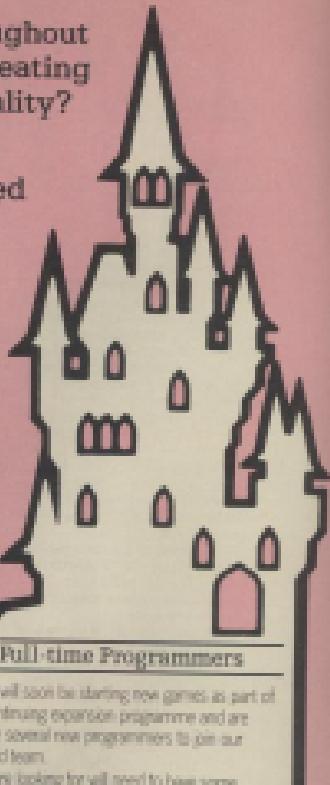
Pobla's conversion is colourful, fast, and very playable. Like many ST games, the scrolling seems to flicker when there are a lot of animated objects on the screen, but it's nothing serious. Good use is made of the ST's graphics, though the sound and music are average.

Commodore 64, Spectrum and Amstrad versions forthcoming. It will be interesting to see how they measure up to the excellent ST version.

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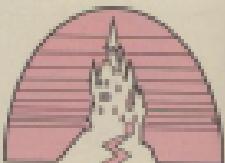
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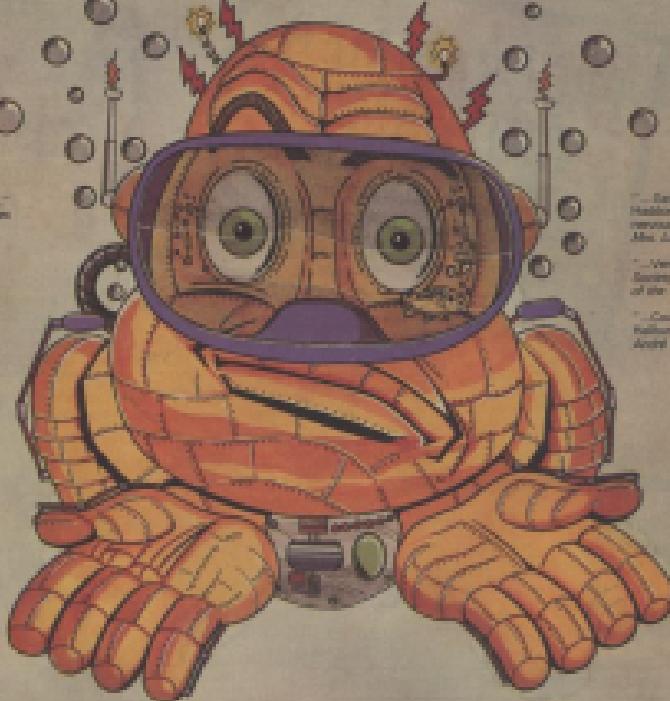
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If you are interested phone Matthew Tims on 0422-813131.



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"...absurdly exciting and fun..."
The Washington Journal Times

"...A game for the kind
of hunting..."
Harrow Magazine

"...What a crazy world
comes to life on the screen..."
Computer Games Review

"...Sweevo is a mad
scientist and you're a
mischievous alien..."
Amiga Action

"...Very silly..."
Review for the presentation
of the CD-ROM

"...Could have had the
golden ball..."
Amiga Power



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